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SOFTWARE MANUAL
FX-PCS-DU/WIN-E

FX

FX-PCS-DU/WIN-E

Software Manual

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Foreword

- This manual contains text, diagrams and explanations which will guide the reader in the correct installation and operation of the FX-PCS-DU/WIN-E.
- Before attempting to install or use the FX-PCS-DU/WIN-E this manual should be read and understood.
- If in doubt at any stage of the installation of the FX-PCS-DU/WIN-E always consult a professional electrical engineer who is qualified and trained to the local and national standards which apply to the installation site.
- If in doubt about the operation or use of the FX-PCS-DU/WIN-E please consult the nearest Mitsubishi Electric distributor.
- This manual is subject to change without notice.

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FAX BACK

Mitsubishi has a world wide reputation for its efforts in continually developing and pushing back the frontiers of industrial automation. What is sometimes overlooked by the user is the care and attention to detail that is taken with the documentation. However, to continue this process of improvement, the comments of the Mitsubishi users are always welcomed. This page has been designed for you, the reader, to fill in your comments and fax them back to us. We look forward to hearing from you.

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Guidelines for the safety of the user and protection of the FX-PCS-DU/WIN-E

This manual provides information for the use of the FX-PCS-DU/WIN-E. The manual has been written to be used by trained and competent personnel. The definition of such a person or persons is as follows;

- a) Any engineer who is responsible for the planning, design and construction of automatic equipment using the product associated with this manual should be of a competent nature, trained and qualified to the local and national standards required to fulfill that role. These engineers should be fully aware of all aspects of safety with regards to automated equipment.
- b) Any commissioning or service engineer must be of a competent nature, trained and qualified to the local and national standards required to fulfill that job. These engineers should also be trained in the use and maintenance of the completed product. This includes being completely familiar with all associated documentation for the said product. All maintenance should be carried out in accordance with established safety practices.
- c) All operators of the completed equipment should be trained to use that product in a safe and coordinated manner in compliance to established safety practices. The operators should also be familiar with documentation which is connected with the actual operation of the completed equipment.

Note: the term 'completed equipment' refers to a third party constructed device which contains or uses the product associated with this manual.

Notes on the symbology used in this manual

At various times through out this manual certain symbols will be used to highlight points of information which are intended to ensure the users personal safety and protect the integrity of equipment. Whenever any of the following symbols are encountered its associated note must be read and understood. Each of the symbols used will now be listed with a brief description of its meaning.

Hardware warnings



Indicates that the identified danger WILL cause physical and property damage.



Indicates that the identified danger could POSSIBLY cause physical and property damage.



Indicates a point of further interest or further explanation.

Software warning



Indicates special care must be taken when using this element of software.



Indicates a special point which the user of the associate software element should be aware of.



Indicates a point of interest or further explanation.

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1. Introduction

This section describes the major functions of the software FX-PCS-DU/WIN-E and the outline of this manual. The applicable data access units are also described here. Make sure to read this section before using the software.

1.1 Outline

The software package FX-PCS-DU/WIN-E (hereafter referred to as "software DU/WIN-E") is a screen creation software for graphic operation terminals (GOT-F900) and data access units (DU) running on the Microsoft Windows 95/98/Me/NT4.0 (hereafter referred to as "Windows").

1.1.1 List of models compatible with the software DU/WIN

Table:1.1

FX-PCS-DU/WIN-E version	V1.0	V2.0	V2.1	V2.2	V2.3	V2.4	V2.5	V2.6	V2.7	V2.8
FX-10DU-E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ^{*3}
FX-25DU-E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FX-30DU-E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FX-40DU-ES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FX-40DU-TK-E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FX-50DU-TK-E FX-50DU-TKS-E	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F940GOT-SBD-E F940GOT-LBD-E		✓	✓	✓	✓	✓	✓	✓	✓	✓
F940GOT-SWD-H-E F940GOT-LWD-H-E			✓	✓	✓	✓	✓	✓	✓	✓
F930GOT-BWD-E				✓	✓	✓	✓	✓ ^{*1}	✓ ^{*1}	✓ ^{*1}
F940WGOT-TWD-E ^{*2}							✓	✓	✓	✓
F920GOT-BBD5-K-E F930GOT-BBD-K-E									✓	✓

*1 Screen creation in the longitudinal installation is supported in the F930GOT.

*2 Screen creation with screen division into 2 or 3 portions is not supported.

*3 FX1S and FX1N Series PLCs are applicable to the screen data transfer function of FX-10DU.

1.1.2 Product configuration (accessory list)

Check the software DU/WIN while referring to this checklist to confirm that the following accessories are supplied.

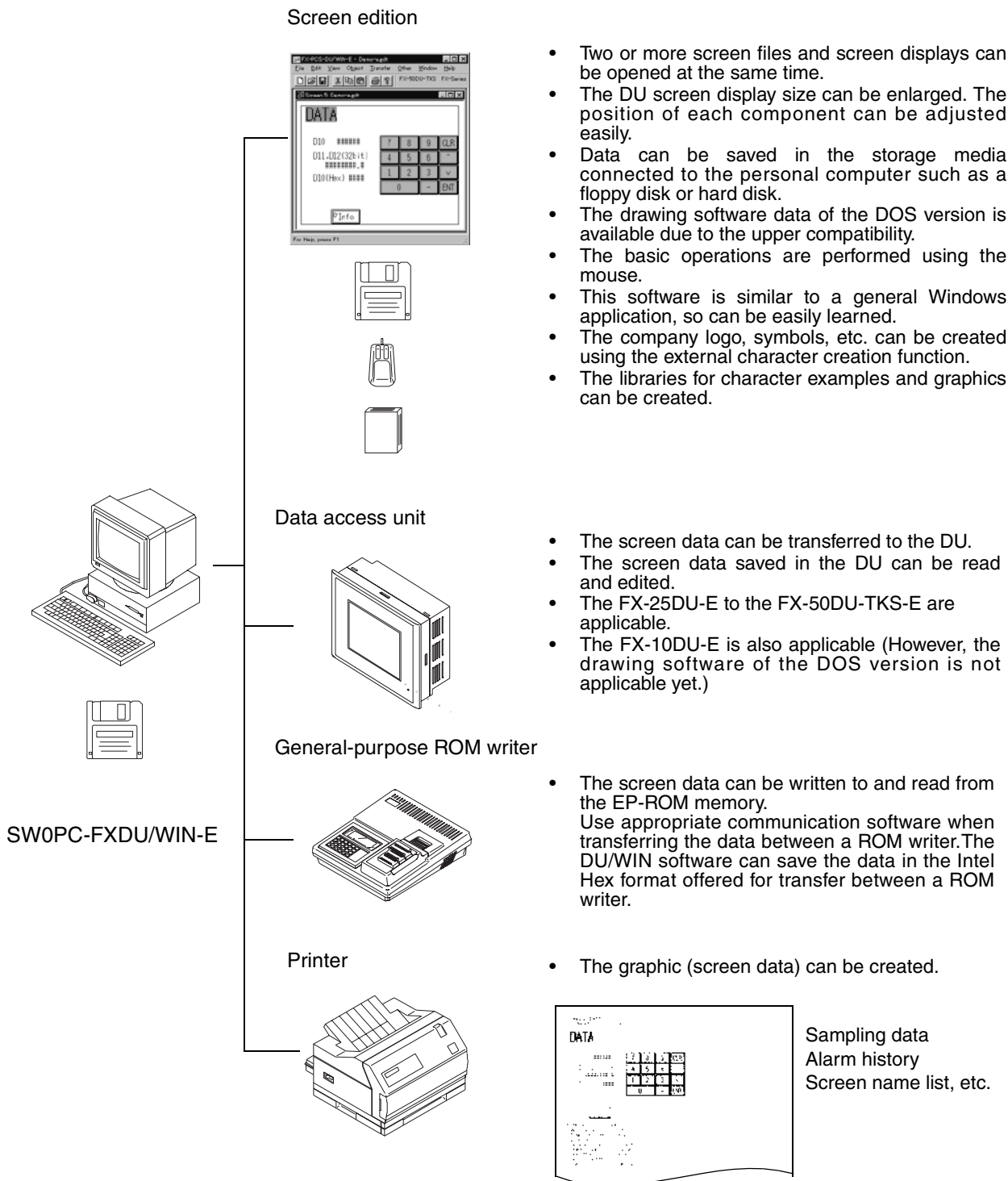
Product model:FX-PCS-DU/WIN-E

- System disk SW0PC-FXDU/WIN-E
Floppy disk 3.5-inch (1.44 MB) 3 disks
- Manual (this manual) JY992D68301

The cable to connect the DU and the personal computer is offered as an option. Check the system configuration, and use a cable suitable to your personal computer.

1.1.3 Major features of the software

The software DU/WIN has the diversified convenient functions as follows. The operability is excellent because the features of the Windows are offered and the graphic interface is provided. Two or more applications and two or more screen data files can be started up at the same time. You can edit the data while looking at two or more DU screens at the same time.



1.2 How to read this manual

This paragraph describes the description format, the abbreviations in the text, the key symbols, etc. adopted in this manual.

1.2.1 Contents described in manual

This manual adopts the following format. Refer to this page for index.

In "9. Related Information", you can utilize the function list and the object list for index. Refer to Section 9 also.

General format of manual

The diagram illustrates the layout of a manual page with various annotations:

- Section title:** Points to the page header "Preparation for Drawing and Basic Options 5".
- Paragraph title:** Points to the section heading "5.2 Let's start to create the screen."
- Detailed explanation of each paragraph:** Points to the descriptive text under section 5.2.
- Note:** Points to a warning icon (exclamation mark in a circle) under the heading "Cautions before creating the screen".
- Notes and cautions described in main text above:** Points to the list of cautions under the heading "Cautions before creating the screen".
- Subtitle:** Points to the section heading "5.2.1 Preparation for drawing (Screen window)".
- Reference page:** Points to the text "When creating the screen data for the first time, select and click 'New'." and "When editing the registered screen data, select and click 'Open ...'." which refer to paragraphs 5.2.2 and 5.2.3.
- Screen:** Points to the "Project Settings" dialog box screenshot, specifically the "DU" list.

The page content includes:

FX Series Programmable Controllers Preparation for Drawing and Basic Options 5

5.2 Let's start to create the screen.
 This paragraph describes actual cases to create the screen newly using objects such as texts and images. The preparatory procedure for modal setting, etc. to be performed after the software is started up and before the screen is created is described here.

Cautions before creating the screen

- In the examples adopted in this paragraph, the FX-50DU-TK(S) is connected. When another DU unit is connected, some settings may be different. Have in mind that the following items are different when another DU unit or another PC unit is connected.
 - Though bit devices (X, Y, M, T, C and S) and word devices (T, C and D) are described in the specification of a device in the examples here, available devices vary depending on a connected PC.
 - The touch key setting and the ten-key display function shown here indicate the case where the F940GOT, the FX-50DU-TK(S) or the FX-40DU-TK(B) is connected.
 - The procedure to change over the screen from a PC is partially different in another DU unit.
 - The vertical direction of characters and another contents can be displayed in the half-width size only in the F940GOT, the FX-50DU-TK(S) and the FX-25DU(L-F).
 - Eight colors are displayed in the color pallet for the specification of the character color and

5.2.1 Preparation for drawing (Screen window)
 This paragraph describes the procedures to create the screen newly and to read and edit the existing screen data.

- Suppose that the basic screen (initial screen displayed when the DUWIN software is started up) is displayed.
- Click "File" on the menu bar.
- Click to select "New".
 Click "New" when creating the screen newly or when reading and editing the existing screen data.
- The Project Settings dialog box is open. Refer to Paragraph 5.2.2 "Project" indicates the data to be created from now on.

When creating the screen data for the first time, select and click "New".
 Refer to Paragraph 5.2.2

When editing the registered screen data, select and click "Open ...".
 Refer to Paragraph 5.2.3

When this button is clicked, the DU list is displayed.

Select the DU unit (FX-50DU-TKS here) for which a new screen is to be created, and click it.

MITSUBISHI 5-2

Format of "8. Object Function Description"

FX Series Programmable Controllers
Object Function Description 8

8.11 Setting the touch key (TouchKey)

The "TouchKey" object allows to set the button size and the button position and select the button shape by combining a cell which is a matrix of the DU screen. By manipulating a touch key on the screen provided in the DU, switches to turn on/off bit devices in the PC and the screen changeover function are offered.

Description on the object

TouchKey
Sets the position, the size and the shape of a button which functions as a touch key on the DU screen. A function can be assigned to a set key. In the 50DU-TK and the F940GOT, two or more functions can be assigned.

Additional functions

Switch	[40DU-TK] [50DU-TK] [F940GOT]
Sets a bit device in the PC to be turned on/off (alternate, momentary, set or reset).	
Send databank	[50DU-TK] [F940GOT]
Sets transfer between a data file (memory in the DU) and a file register in the PC.	
Change screen	[40DU-TK] [50DU-TK] [F940GOT]
Changes over to a screen No. assigned to a key.	
Data setting	[40DU-TK] [50DU-TK] [F940GOT]
Reads the keyboard (decimal or hexadecimal) or the ten-keys.	
Increment	[50DU-TK] [F940GOT]
Adds "1" to a numeric of a word device (C, T, D) (increment).	
Decrement	[50DU-TK] [F940GOT]
Subtracts "1" from a numeric of a word device (C, T, D) (decrement).	
Write constance	[50DU-TK] [F940GOT]
Sets a constant (preset value) to a word device (C, T, D).	

Window which can be set Paragraph 7.1

Operation flow from the tool bar (The Screen window indicates an example after an object is created. The object dialog box is actually displayed.)

Applicable models

8-64

1.2.2 Abbreviations in the text

The following terms may be abbreviated in the text in this manual.

- Microsoft Windows®95, 98, NT4.0 and 2000 may be referred to as "Windows"
- The software kit for creating the display screen "FX-PCS-DU/WIN-E (for Windows)" may be referred to as "software DU/WIN".
- The general-purpose personal computer PC/AT compatible machine may be referred to as "personal computer".
A floppy disk may be referred to as "FD". A floppy disk drive may be referred to as "FD drive". Each of them may be referred to as "disk".
- The data access unit may be referred to as "DU". Each DU model may be referred to as follows.
 - Data access unit FX-10DU-E ----- 10DU
 - Data access unit FX-25DU-E ----- 25DU
 - Data access unit FX-30DU-E ----- 30DU
 - Data access unit FX-40DU-ES ----- 40DU
 - Data access unit FX-40DU-TK-E ----- 40DU-TK
 - Data access unit FX-50DU-TK-E, FX-50DU-TKS-E ----- 50DU-TK
- The graphic operation terminal is referred to as "GOT-F900".
 - Graphic operation terminal Model F94□GOT-SWD-E/F94□GOT-LWD-E - - F940GOT
 - Graphic operation terminal Model F940WGOT-TWD-E ----- F940WGOT
 - Graphic operation terminal Model F930GOT-BWD-E ----- F930GOT
 - Graphic operation terminal Model F930GOT-BBD-K-E ----- F930GOT-K
(The abbreviation notation of the F930GOT in the text is included. Refer to the following graphic operation terminal if it has the same functions as the F940GOT in the text.)
 - Graphic operation terminal Model F920GOT-BBD5-K-E ----- F920GOT-K
- The devices of the programmable controller (PC) are abbreviated as follows.
 - Input: X
 - Output: Y
 - Auxiliary relay: M
 - State: S
 - Timer: T
 - Counter: C
 - Data register: D

The output contacts of X, Y, M, X, T and C are called "bit devices". T, C and D are called "word devices". All of them are called "devices".

* In this manual, the devices of the FX PC are described. In any PC other than the FX PC, read the devices described in this manual as the devices in the corresponding PC.
- The liquid crystal screen of the display unit and the notebook personal computer may be referred to as "CRT".
- The handy graphic operation terminal is referred to as "handy GOT".
 - Handy GOT
Read it as "F940GOT" because its functions are equivalent to those of F94□GOT-SWD/LWD-E.
 - Handy GOT F94□GOT-SBD/LBD-H-E ----- Handy GOT
- The GOT and the handy GOT may be referred to as "DU".

MEMO

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2. Installation

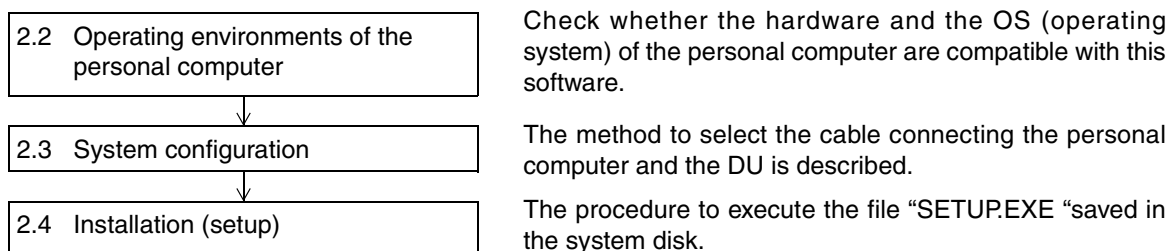
This section describes how to install the software FX-PCS-DU/WIN-E.

Make sure to read the connection of each equipment, the operating environments of the personal computer, the compatibility between files, etc. described in this section before installing the software.

2.1 Software installation procedure

This paragraph describes the procedure to install the software DU/WIN to the personal computer and start it up.

- Checking the operating environments and setting up the software



2.2 Operating environments of the personal computer

This paragraph describes the system specifications required to use the software DU/WIN.

Table:2.1

Item	PC/AT compatible machine
OS	Microsoft Windows 95 English version Microsoft Windows 98 ^{*1} English version Microsoft Windows Millennium Edition English version (Windows Me ^{*2}) Microsoft Windows NT4.0 ^{*1} (Workstation) English version (Service Pack 3 or later) Microsoft Windows 2000 ^{*3} English version Microsoft Windows XP Operation of each OS shall be assured in the personal computer to be used.
Computer main body	Microsoft Windows 95: CPU i486SX or better one Microsoft Windows 98: CPU i486DX (66 MHz) or better one Microsoft Windows Me: CPU Pentium 150 MHz or better one Microsoft Windows NT4.0: CPU i486(25 MHz) or better one Microsoft Windows 2000: CPU i486(133 MHz) or better one
Required memory	Microsoft Windows 95: 8 MB or more (12 MB or more is recommended.) Microsoft Windows 98: 16 MB or more (32 MB or more is recommended.) Microsoft Windows Me: 32 MB or more Microsoft Windows NT4.0: 16 MB or more Windows 2000: 32 MB or more (64 MB or more is recommended.)
Hard disk capacity	Free space of 3 MB or more
Floppy disk unit	3.5-inch (2HD) floppy disk drive × 1 unit A disk formatted as 1.44 MB shall be able to be read.
Display	Video display adaptor whose resolution is VGA or better
Interface	RS-232C serial interface (COM1 to COM4 shall be able to be changed over.) Printer interface
Printer	Printer in accordance with the OS above The drawing data in the FX-50DU-TKS-E and the F940GOT-SWD-E is compatible with a color printer
Others	Mouse or other pointing device

*1 It is supported in the DU/WIN Ver. 2.20 or later.

*2 It is supported in the DU/WIN Ver. 2.60 or later.

*3 It is supported in the DU/WIN Ver. 2.50 or later.

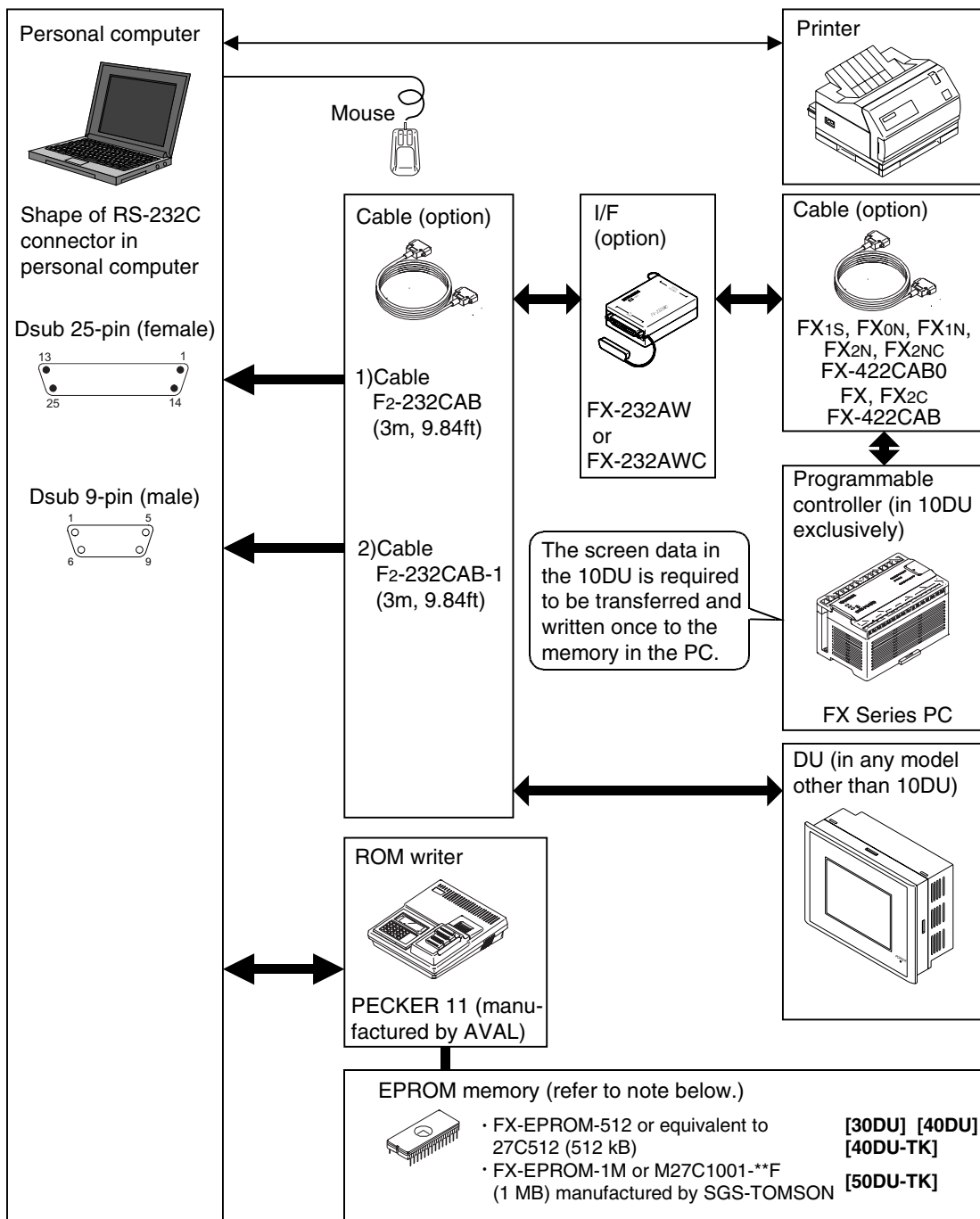
2.3 System configuration

The cable connecting the personal computer and the DU is offered as an option. Select a suitable one as described below.

10DU, 25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

Select the cable suitable to the shape of the RS-232C interface connector on the personal computer among 1) to 2).

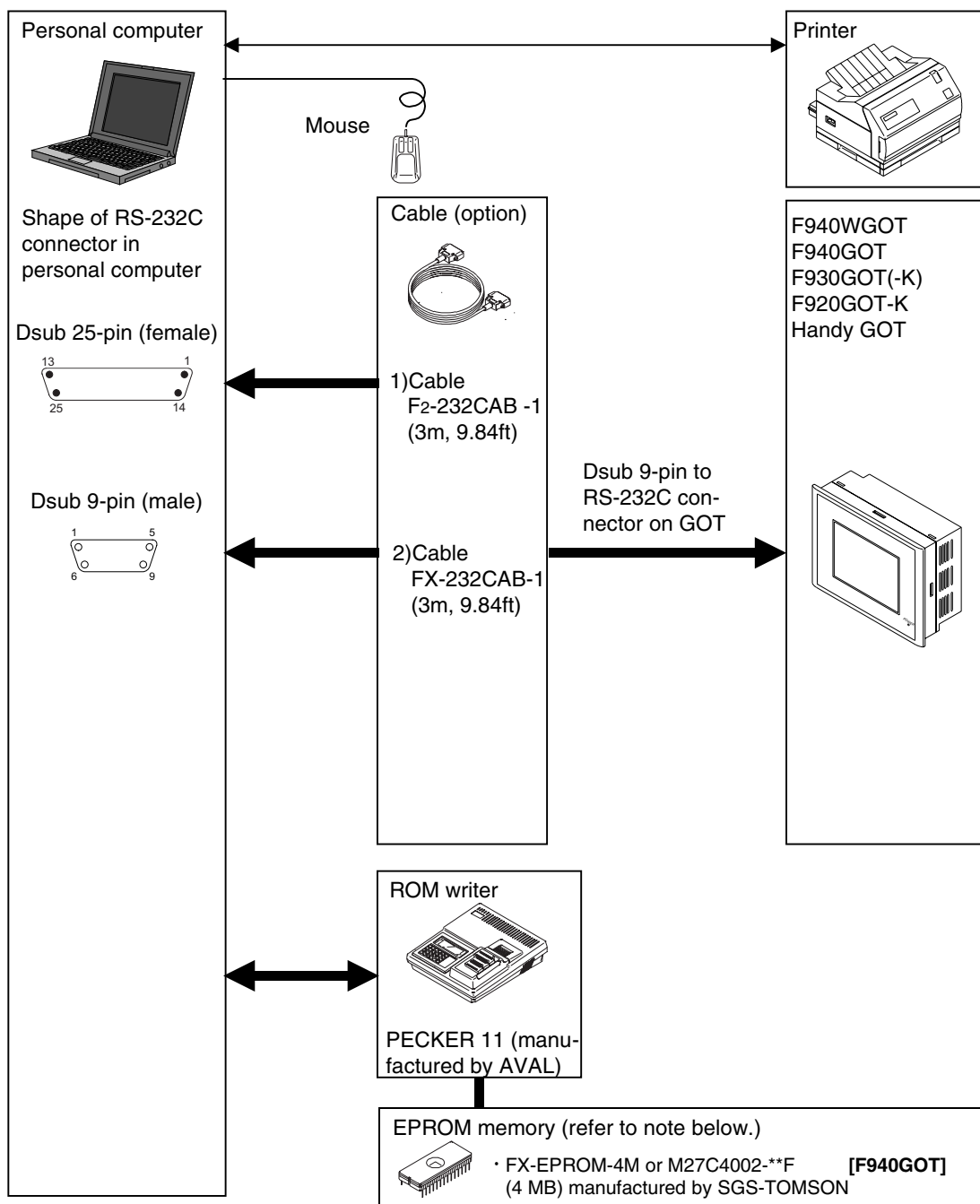
The FX-10DU-E shall be connected to the FX Series PC.



F920GOT-K, F930GOT(-K), F930GOT, F940GOT, F940WGOT and Handy GOT

Select the cable suitable to the shape of the RS-232C interface connector on the personal computer among 1) to 2).

The cables 2) and are different from those for the DU shown in the previous page. Pay attention to the model name.



2.4 Installation (setup)

The following three methods are available to install the software DU/WIN to the Windows. In this manual, the general method a) is adopted.

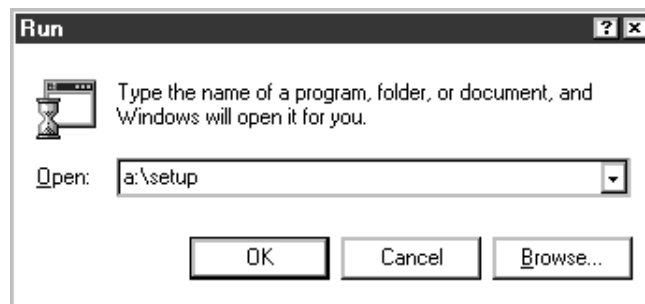
- a) Select "Start" and "Save As", enter the setup file name, then execute installation.
- b) Display the floppy disk file list from the drive offered by "My Computer", then execute the SETUP.EXE.
- c) Select "My Computer", "Control panel" and "Add/Remove Programs", then execute installation.

It is recommended to make the backup of the system disk before starting installation.

2.4.1 Starting up the setup program

It is supposed that the Windows is running.

- 1) Insert the system disk 1 into the floppy disk drive.
- 2) Click "Start" of the Windows. Place the cursor on "Save As" on the menu, and click the mouse for execution.
- 3) Enter the drive name, colon (:), and the yen mark (\) in this order. Enter the setup file name "SETUP". The drive name varies depending on the model of the personal computer, the drive connected, etc. as follows.
The first floppy disk drive is fixed to "Drive A", and the second floppy disk drive is fixed to "Drive B".
When the floppy disk drive used is "Drive A", enter "a:\setup".



- 4) Click the OK button or press the Enter key. The installer is started up. Perform the operation in accordance with the instruction displayed in the dialog box.
For example, in the case of "User information", make sure to enter both the name and the company name, then click the Next button.
When installation is finished, the FXDU icon is registered in the start menu program.

When setup is completed, proceed to "3. Starting up and Terminating the Program".

2.5 Deleting the application

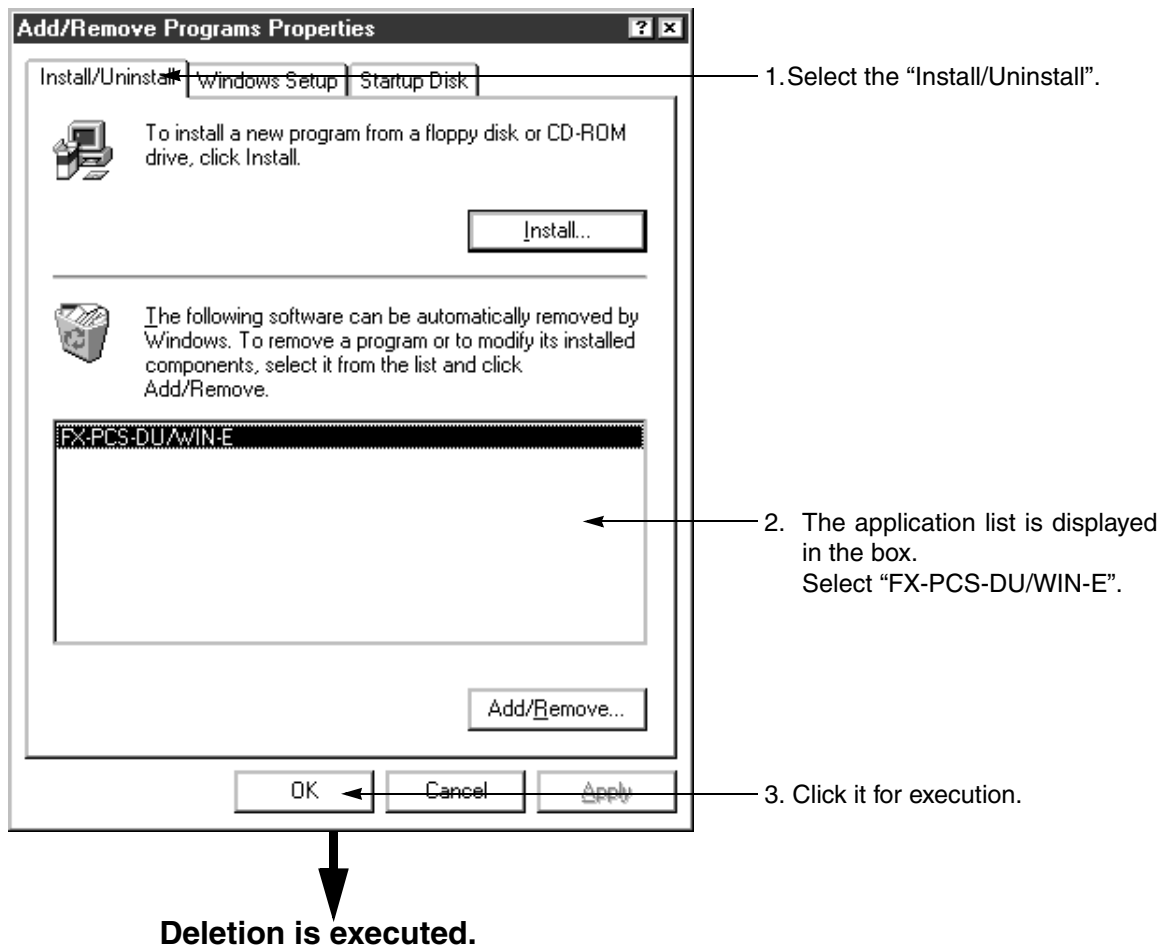
The software DU/WIN can be easily deleted from the hard disk of the personal computer using the “Add/Remove Programs” function of the Windows.

This paragraph describes the deletion procedure.

Make sure to make the backup before starting deletion when the files of screen data, external character data, comments, etc. are included in the folder.

Deletion procedure

- 1) Double-click the “My Computer” icon.
- 2) Double-click the “Control panel” icon in the “My Computer” folder.
- 3) Double click the “Add/Remove Programs” icon.
The “Add/Remove Programs Property” dialog box is open.
- 4) Select the “Install/Uninstall”.
The list of applications registered in the box is displayed. Select “FX-PCS-DU/WIN-E” in the list.
Click the Details button.



2.6 Installation information

2.6.1 Installation destination directory

When the software DU/WIN is installed in the initial setting, the system program is written in the following directory.

C:\Program Files\FX-PCS-DU-WIN-E**System file list**
 \IMAGES**Image library files**

Table:2.2 System file list

File name	Contents
FXDUWIN.EXE	Execution file
FXDUWIN.HLP	Help file
FXDUWIN.CNT	

Table:2.3 Image library file list

File name
FRAMEB**.BMP LAMPLC**.BMP etc. *1

*1 Refer to "9.7 Image library data list"

2.6.2 Upper compatibility of the drawing file

Compatibility between DOS version and Window version

A drawing file created using the FX-PCS-DU/AT-EE (DOS version) can be read using the DU/WIN software. However, have in mind that the screen data which is newly created or edited using the DU/WIN software and saved in a file (DUP format) cannot be read using the software of the DOS version.

To edit a file using the software of the DOS version, the screen data should be saved in the GDT format.

Though files have been created using the software of the DOS version for external characters and printers title (document footers in the DU/WIN software), such files cannot be handled by the DU/WIN software.

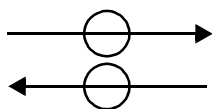
However, the external character data and the printer title data can be read because they are included in the screen data.

Files created using the software of the DOS version

Created using FX-PCS-DU/AT-EE

Screen data XXXX.GDT
(including external character files and printer titles)

Sampling XXXX.SDF
Alarm history XXXX.HST
External character file
 XXXX.UDL
Printer title XXXX.PTL



Files created using software DU/WIN

Created using

Screen data XXXX.DUP
(including external files and document footers)

Sampling XXXX.TXT
Alarm history XXXX.TXT
Alarm count XXXX.TXT



Compatibility between DU/WIN V1. x and DU/WIN V2. x

The F940GOT Series display unit added by version upgrade (to V2.0) of the DU/WIN software cannot be read by a version former than V2.0. DU files which have been handled by V1.0 can be read.

Ver1. x

10DU, 25DU, 30DU,
40DU-TK, 50DU-TK

Not compatible with F940GOT Series



Ver2. x

10DU, 25DU, 30DU,
40DU-TK, 50DU-TK

F940GOT Series



Compatibility when the Windows version and the DOS version are used together

When using upgraded objects and added objects of the DU and the F940GOT, make sure to use the compatible software of the DOS version and the Windows version.

If a file is read by the software of incompatible version, errors will occur in the drawing data saved in the file.

For compatible versions, refer to "9.2 Additional functions and corresponding version of the DU".

MEMO

1	Introduction
2	Installation
3	Starting up and Terminating the Program
4	What You Should Know Before Starting Drawing
5	Preparation for Drawing and Basic Operations
6	Menu Bar Functions
7	Common Drawing Operations
8	Object Function Description
9	Related Information

3. Starting up and Terminating the Program

The software DU/WIN can be started up and terminated using the same procedures as those for a general application. This section describes these procedures.

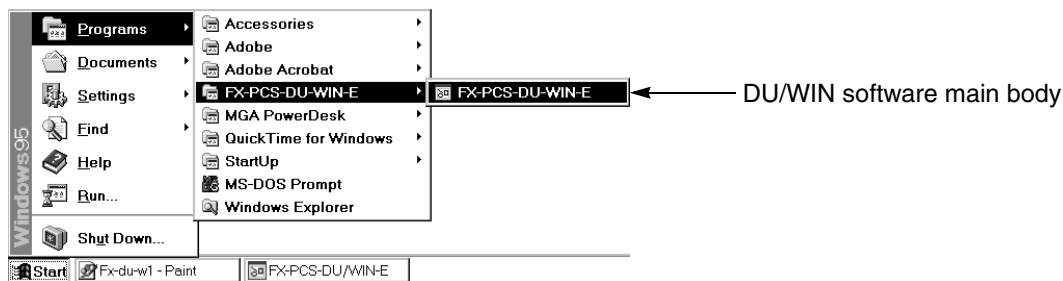
This section also describes the buttons and the display contents on the basic screen displayed when the program is started up.

3.1 Starting up the program

This paragraph describes the procedure to start up icons (programs) created by installation and the DU/WIN software.

3.1.1 Program type

The following icons are created inside the FX-PCS-DU-WIN-E folder. Each of them can be started up. (For the operating procedure, refer to the next page.)



Icon name	Description
FX-PCS-DU-WIN-E	DU/WIN software main body Allows to create screens for the DU.

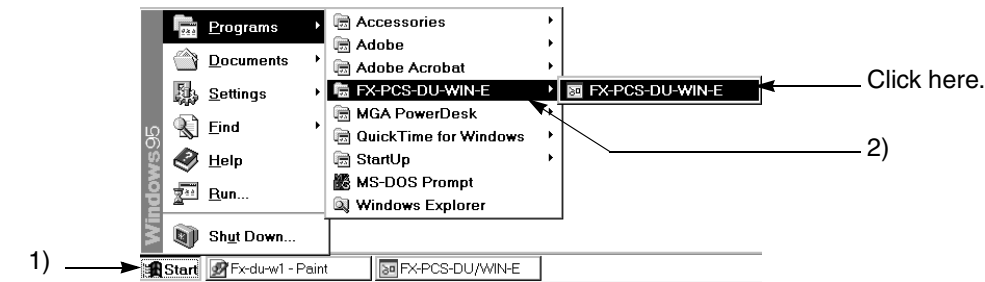
3.1.2 Starting up the program

In the Windows, diversified general applications can be started up from the menu offered by clicking of the Start button.

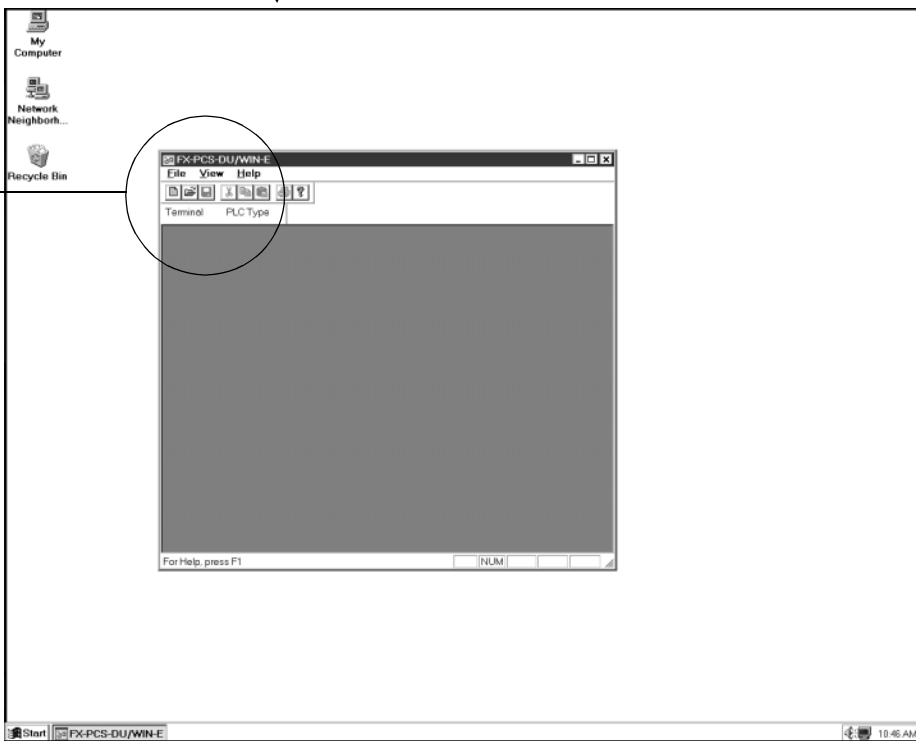
The software DU/WIN is also started up from this menu.

Startup procedure

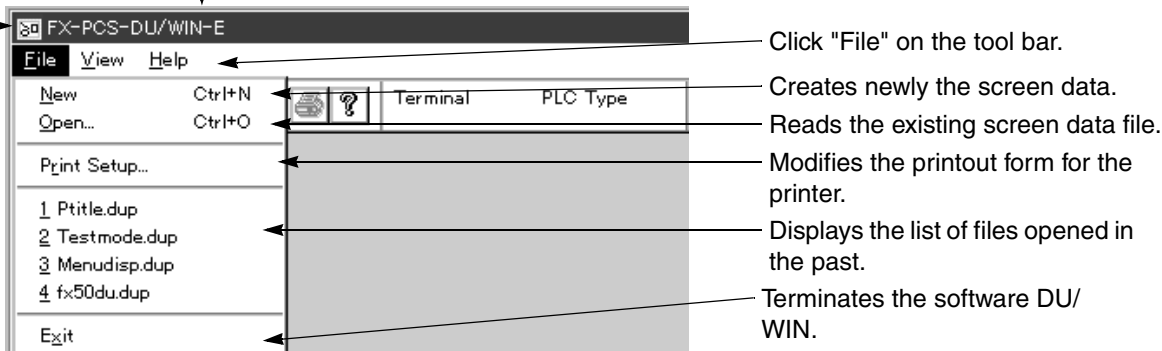
- 1) Click the Start button, and point the program. The following menu is open.
- 2) Point the folder "FX-PCS-DU-WIN-E", and click the FX-PCS-DU-WIN-E program.



[Basic screen]



Select the function button to be displayed on the tool bar.

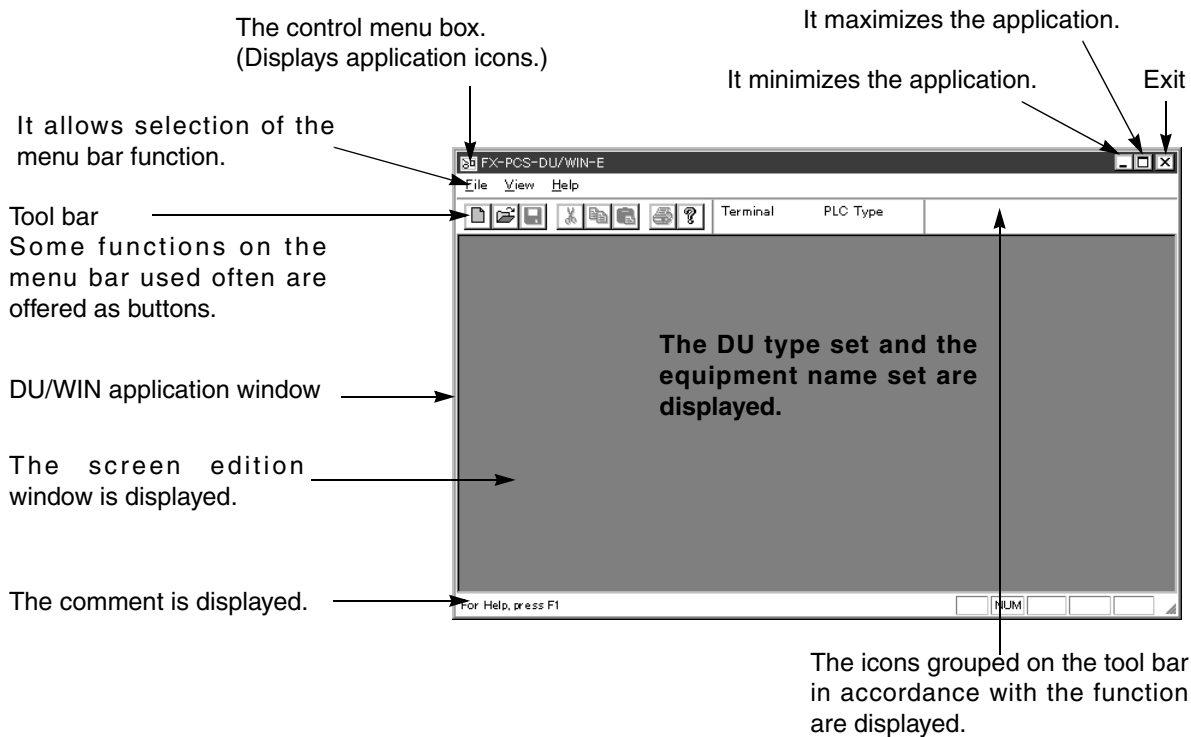


3.2 Screen configuration of the DU/WIN

This paragraph describes how to modify the contents displayed on the screen of the software DU/WIN.

3.2.1 Basic screen

This paragraph describes the configuration of the screen displayed at first when the software DU/WIN is started up.

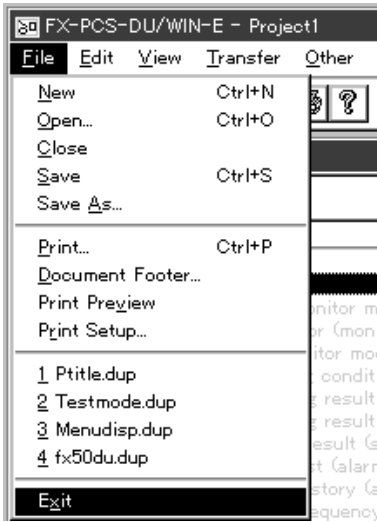


Refer to "5.Preparation for Drawing and Basic Operations"

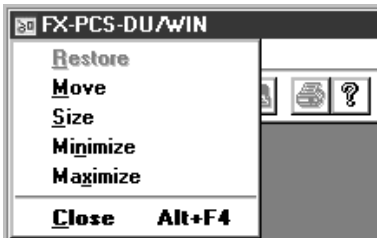
3.3 Terminating the program

The following three methods are available to terminate the software DU/WIN.
This operation is equivalent to the operation in general software of the Windows..

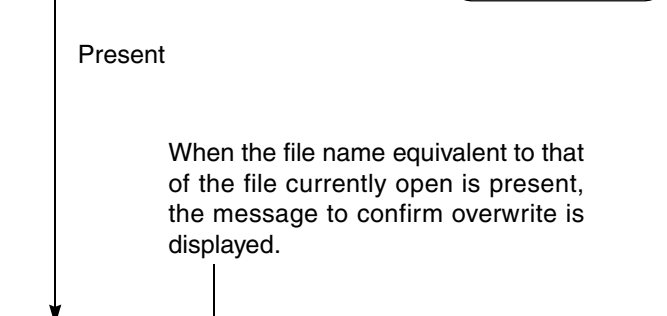
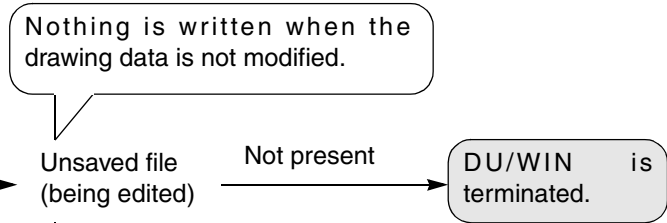
1. Select "File" and "Exit".



2. Click the control menu box of the application window, and select "Close".



3. Click the termination button provided in the upper right of the application window.



- [Yes]
The file is saved with the current file name.
- [No]
The modification data is destructed, then the program is terminated.
- [Cancel]
Execution of termination is aborted, and the system returns to the application.

DU/WIN is terminated.

The drawing data file (active window) is terminated.



When two or more application windows are open

- The software DU/WIN can open and edit two or more screen data files, and start up two or more applications.
- When terminating the program while two or more applications are started up, make each window active in turn, and terminate it using either of the methods above.

1	Introduction
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6	Menu Bar Functions
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8	Object Function Description
9	Related Information

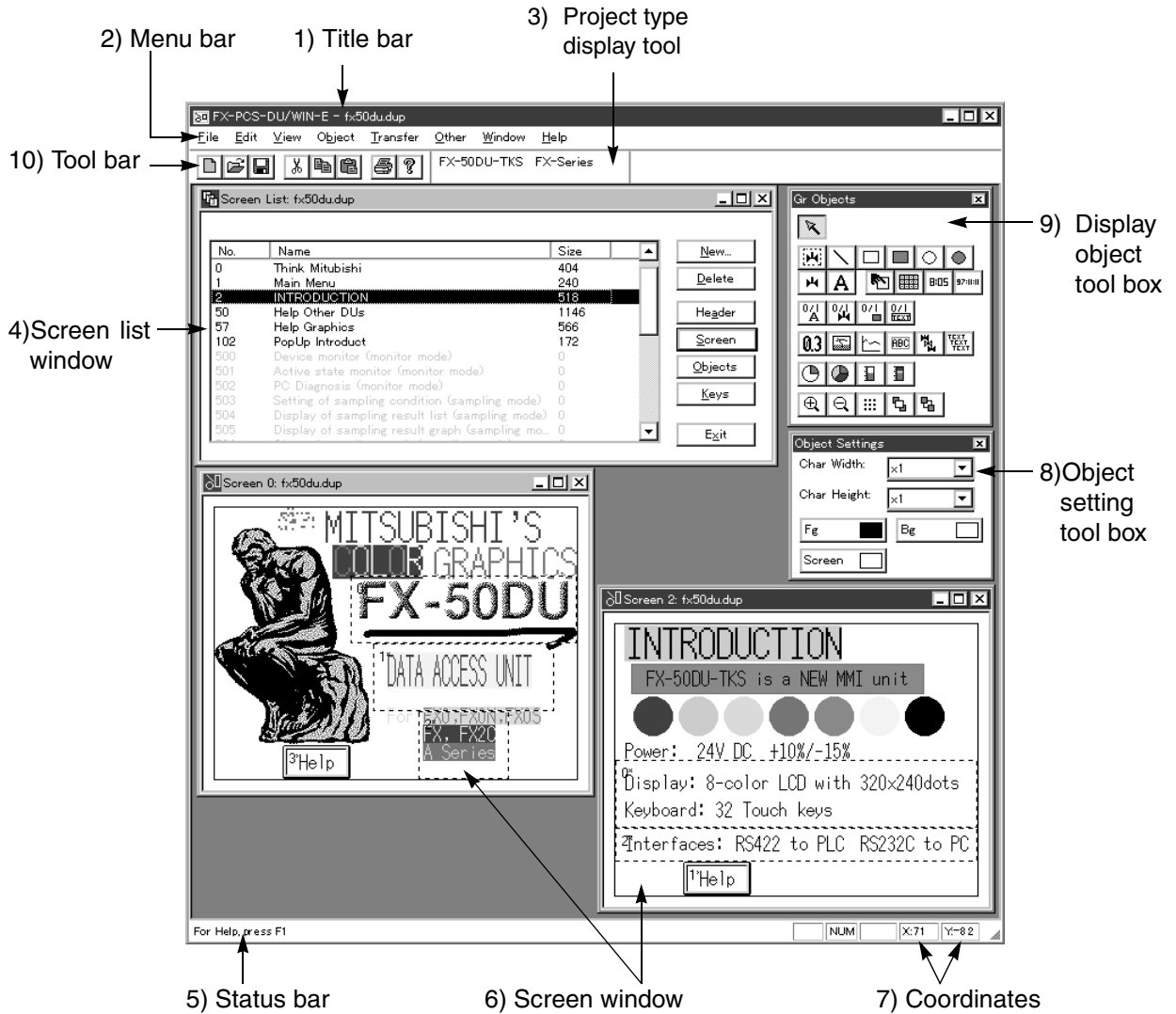
4. What You Should Know Before Starting Drawing

This section describes the basic functions and the contents which you should know preliminarily before creating the screen. Make sure to read this section thoroughly if it is your first time to create the DU screen.




4.1 Name of each object on the screen

This paragraph describes the name of each object and its function on the DU/WIN software screen.

DU/WIN application window



Description on the object names on the screen

- 1) Title bar
Indicates the window name.
(For example, "FX-PCS-DU/WIN-E" indicates the software name, "Screen 107" indicates the screen No., and the following "Fx50du.gat" indicates the screen data file name.)
- 2) Menu bar  Paragraph 6.1
Displays the menu to select the command.
The menu items displayed here vary depending on the active window and the system status.
For example, when the software is started up, "File", "View" and "Help" exclusively are displayed.
(The screen shown above indicates the case where the screen No. is selected from the screen list and the screen No. 107 window becomes active.)
- 3) Project type display tool  Paragraph 5.2.2
Displays the DU type and the programmable controller name set on the project setting window.
- 4) Screen list window  Paragraph 5.2.5
Displays the screen No., the screen name and the memory capacity in the list to allow selection of the screen No. to be displayed.
- 5) Status bar
Displays the message and "7) Coordinates".
- 6) Screen window
Displays the screen selected on the screen list window as the DU screen image to allow edition.
- 7) Coordinates
Displays the mouse cursor position as the coordinates while the upper left corner of the effective area of the DU screen image on the active "6) Screen window" is regarded as "0, 0".
- 8) Object setting tool box
Allows to modify the size, the color and the background color of the objects registered on the screen window.
- 9) Display object tool box
Displays the objects as buttons so that they can be selected during drawing to create the screen.
- 10) Tool bar
The commands often used, the display object tool 9) and the object setting tool 8) can be displayed as the tool buttons, and can be displayed on the tool bar and the tool box.

4.2 Types of the DU screen and the F940GOT screen

Three types of DU/F940GOT screens are offered; the "common screen" which is always displayed, the "user screen" which the user can create arbitrarily and the "system screen" which is built in the DU/F940GOT. Among them, the user can register objects and create the screen for the common screen and the user screen.

Screen list window of the FX-PCS-DU/WIN-E

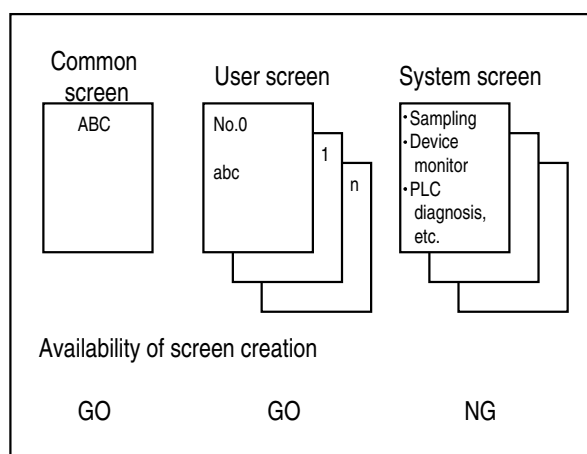
No.	Name	Size
0	Common Screen	90
1	Think Mitsubishi	404
2	Main Menu	240
50	INTRODUCTION	518
57	Help Other DUs	1146
57	Help Graphics	566
102	PopUp Introdect	172
500	Device monitor (monitor mode)	0
501	Active state monitor (monitor mode)	0
502	PC Diagnosis (monitor mode)	0
503	Setting of sampling condition (sampling mode)	0
504	Display of sampling result list (sampling mode)	0

Buttons on the right: New..., Delete, Header, Screen, Objects, Keys, Exit.

Annotations on the right: Common screen (points to No. 0), User screen (points to No. 1-57), System screen (points to No. 500-504).

The screen above indicates the FX-50DU-TKS-E.

DU screen types



Types of the DU screen

- Common screen**
 The registered objects are always displayed, and their functions are valid. For example, when the user screen No. 0 is displayed in the DU while the character string "ABC" is registered on the common screen and "abc" is registered on the user screen, "ABC" and "abc" are displayed.
- User screen**
 The user can arbitrarily register the objects and create the screen to be displayed in the DU. In addition, two or more screens can be created, cascaded via the instruction from the programmable controller, changed over each other and displayed in the DU.
- System screen**
 It is preliminarily built in the DU. "Device monitor", "PC diagnosis", etc. are offered, and each of them can be displayed as the user screen so that drawing can be performed efficiently. For example, by specifying the screen No. 500 by changing over the screen, the device monitor screen is displayed. However, some system screens built in the DU cannot be treated as the user screens and their display contents cannot be modified. The system screen names are displayed dimly in gray and cannot be selected on the Screen List window. However, the screen No. of the changeover destination can be confirmed here.



Setting contents varying depending on the DU type

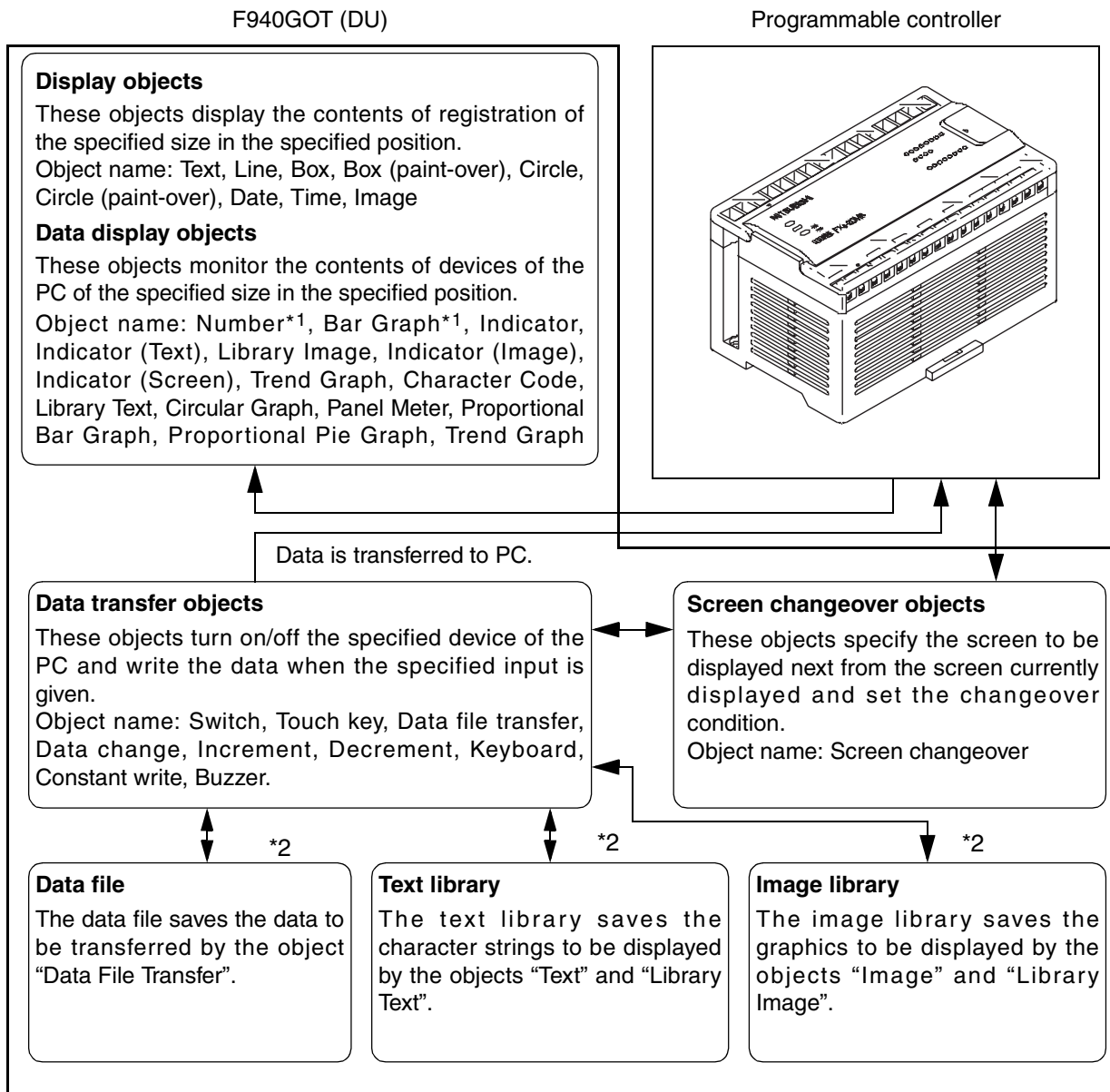
- On the common screen, the types of objects which can be set vary depending on the DU type.
- On the user screen, the types of objects which can be set and the number of screens vary depending on the DU type.
They vary also depending on the programmable controller connected.
- On the system screen, the type and the number of screens vary depending on the DU type.

For the details, refer to the operation manual of the DU.

4.3 Objects constituting the screen

The screen consists of objects classified based on the function such as characters, straight lines, rectangles, etc. The minimum unit element classified is referred to as "object". Objects are classified as follows.

Object classification



*1 In addition to the monitor function, the objects "Number", "Bar Graph", etc. have the function to modify the display device data.

*2 The data file, the image library and the text library save data and character strings, and are distinguished from objects. When the related objects are actuated, the corresponding data and character strings are read.

*3 F940GOT only



Types of objects varying depending on the DU type

- The object names classified above indicate the case where the F940GOT is selected as the DU model and the FX Series unit is selected as a connected PC. For the details of object names which can be registered for each DU type, refer to "9.1.2 Object name index and applicable DU type".

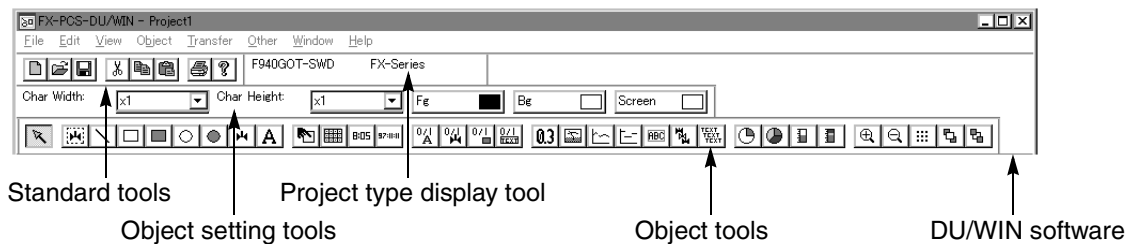
4.4 Functions of tools

Tools are displayed in the shape of icons buttons so that each function can be executed directly and quickly without opening the menu. Tools are classified into groups for each function, and displayed when a target window becomes active (by being selected).

Tools can be displayed in the two status shown below.

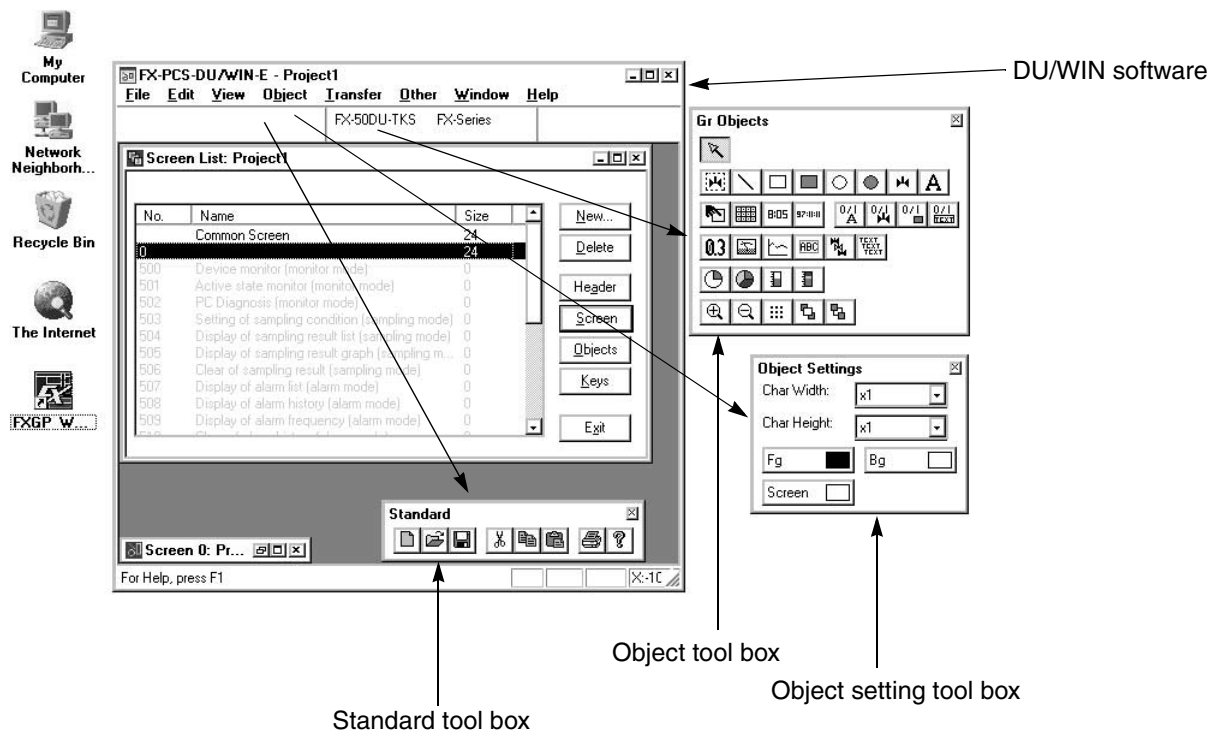
Stored in the menu bar

Tools are embedded in the tool bar position in the DU/WIN software, and move accordingly as the window of the DU/WIN software is moved. When the DU/WIN software is started up, tools are stored in the menu bar.



Accommodated in the tool box

Each tool is displayed on a window independent from the DU/WIN software. Even when the window of the DU/WIN software is moved, the tool box position on the desk-top screen is not changed.



4.4.1 Tool type

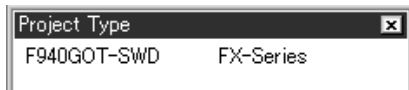
The tool types and their functions are roughly described below.
Check the function of each type.

1. Standard tools



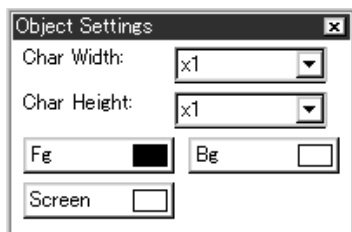
They offer the standard functions of the Windows such as creation of a screen, cut and paste of the object data and printout of data.

2. Project type display tool



When a project is created or when "View", "System Settings" and "Project Setting" are selected on the menu bar, the display unit and the connected PC selected by the displayed project setting dialog are displayed.

3. Object setting tools



For each character string, text and character code object, the character width, the character height and the colors can be changed.

- 1) The contents selected by the object setting tools are reflected on dialog boxes related to character objects.
- 2) After character objects are set on the Screen window, a

4. Display object tools

These tools are displayed when the Screen window becomes active.



Objects which are not displayed on the screen can be set here.

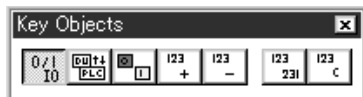
5. Object tools

These tools are displayed when the Object List dialog box becomes active.



Objects which are not displayed on the screen can be set here.

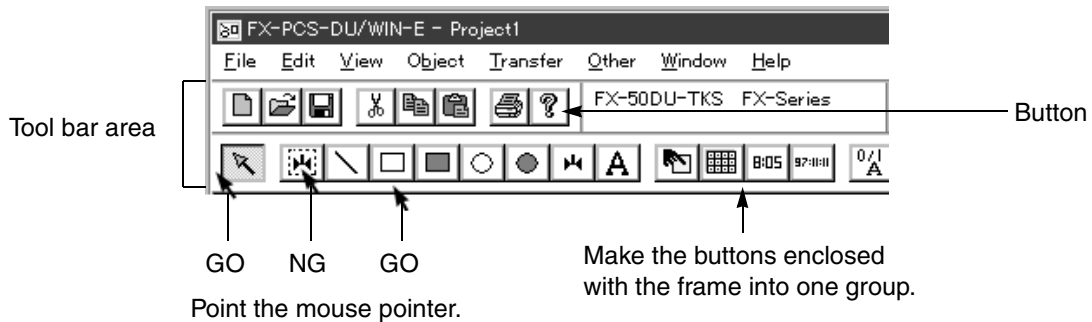
6. Key function object tools



These tools are displayed when the Key List window becomes active.

4.4.2 Modifying the display layout of the tool bar

The display position and the size of the tool bar can be arbitrarily modified and the tool bar itself can be displayed outside the application window in the same way as a general application in the Windows. The tool bar is classified into groups in accordance with the function. The display layout can be modified by the unit of group..



Operating procedure

- 1) Display the tool box.
Move the mouse pointer to an area between the group frame and a button to point the area. Refer to the figure above, and select carefully an appropriate area to point (= place) the mouse pointer.
- 2) Move the mouse to an arbitrary position while pressing and holding the right or left button on the mouse (drag).
- 3) Change the tool box size.
When tools are moved to an area outside the tool bar, they are indicated in the tool box. To change the tool box size, point the top/bottom/right/left boarder using the mouse. When " ↔ " or " ↕ " is displayed, drag it to realize an arbitrary size.



- 4) Store the tool box to the tool bar.
To store tools accommodated in the tool box to the tool bar, point and double-click any position of the tool box or drag the tool box and drop it on the tool bar.

4.5 Common change contents in version upgrade of DU/WIN-E

This paragraph describes the contents different from the description in the manual text due to improvement of the operating procedures and the display contents accompanied by version upgrade of the DU/WIN-E.

V 2.2 → V 2.3

The operability of the screen creation software is improved.

Objects can be moved by 1 dot at a time using the cursor control keys.

In the conventional version, objects can be moved only through the mouse or coordinate inputs.

In the new version, objects selected on the screen window can be moved by 1 dot at a time.

[↑] key: Moves the selected objects upward by 1 dot.

[↓] key: Moves the selected objects downward by 1 dot.

[←] key: Moves the selected objects leftward by 1 dot.

[→] key: Moves the selected objects rightward by 1 dot.

V 2.3 → V 2.4

On the tool bar, "View" is changed to "View/Project".



"Project" is added.

4.6 Before starting screen creation for F920GOT-K

When setting functions or creating screens for the F920GOT-K, refer to the description on the F940GOT in this manual.

This paragraph describes the difference in functions between the F920GOT-K and the F940GOT.

Applicable model

F920GOT-BBD5-K-E

Description

- 1) How to read this manual
- 2) Functions provided in the F940GOT and deleted in the F920GOT-K
- 3) Difference in specifications between the F920GOT-K and the F940GOT
- 4) Colors displayed in the F920GOT-K and the screen creation software

4.6.1 How to read this manual

When reading this manual, regard "F940GOT" as "F920GOT-K".

The functions are almost similar between the F920GOT-K and the F940GOT.

The functions not provided in the F920GOT-K are described in the next paragraph.

4.6.2 Functions and objects provided in the F940GOT but not provided in the F920GOT-K

Have in mind that the following functions and settings of objects are not provided in the F920GOT-K.

Functions not provided in F920GOT-K

Table:4.1

Tool bar of DU/WIN-E	Function	Description	Reference paragraph
View/Project	Device Comments	Not provided	6.4.4
	Data Sampler	Not provided	6.4.8
	System Settings	"Menu Key", "Bar Code Settings" and "Color Settings" cannot be set.	6.4.10 7) 8) 10)
Transfer	DU	Sampling result cannot be read.	6.5.3
Others	Sampled Data	Not provided	6.6.3

Deleted objects

Table:4.2

Tool bar of DU/WIN-E	Object type	Description	Reference paragraph
Object	Graph	"Trend Graph", "Proportional Bar Graph", "Proportional Pie Graph" and "Line Graph" cannot be set.	8.3.2 8.3.5 8.3.6
	Indicator	"Output Indicator" cannot be set.	8.4.6
	Touch Key	Nothing	8.11
	Keyboard	Nothing	8.12

4.6.3 Difference in specifications between the F920GOT-K and the F940GOT

As to description on the specifications of the F940GOT, regard the following items as shown below.

Table:4.3

Item	F920GOT-K	F940GOT
Screen size	128 W × 64 H dots	320 W × 240 H dots
Memory capacity	128 kbyte	512kbyte
Number of characters	8 full-width characters × 4 lines	20 full-width characters × 15 lines

Regard the number of characters as shown above when inputting the objects "Text", "Library Text" and "Ascii" and the text library.

4.6.4 Colors displayed in the F920GOT-K and the screen creation software

Table:4.4

F920GOT-K	DU/WIN-E
White	White
Blue	Black

4.6.5 Changing the backlight color

The backlight color can be set in the unit of screen.

Select "Screen List" - "Screen Header", then set the backlight color in [Backlight Color].

4.7 Before starting screen creation for F930GOT(-K)

When setting functions or creating screens for the F930GOT(-K), refer to the description on the F940GOT in this manual.

This paragraph describes the difference in functions between the F930GOT(-K) and the F940GOT.

Applicable model

F930GOT-BWD-E, F930GOT-BBD-K-E

Description

- 1) How to read this manual
- 2) Functions provided in the F940GOT and deleted in the F930GOT(-K)
- 3) Difference in specifications between the F930GOT(-K) and the F940GOT
- 4) Colors displayed in the F930GOT(-K) and the screen creation software

4.7.1 How to read this manual

When reading this manual, regard "F940GOT" as "F930GOT".

The functions are almost similar between the F930GOT(-K) and the F940GOT.

The functions not provided in the F930GOT(-K) are described in the next paragraph.

4.7.2 Functions provided in the F940GOT but not provided in the F930GOT(-K)

Have in mind that the following functions and settings are not provided in the F930GOT.

Functions not provided in F930GOT

Table:4.5

Tool bar of DU/WIN-E	Function	Remarks	Reference paragraph
View/Project	Device Comments	Not provided	6.4.4
	Data Sampler	Not provided	6.4.8
	System Settings	Bar code cannot be set.	6.4.10 8)
	Screen List	In the F930GOT, do not set external keys on the key list window.	—
Transfer	DU	Sampling result cannot be read.	6.5.3
Others	Sampled Data	Not provided	6.6.3

4.7.3 Difference in specifications between the F930GOT(-K) and the F940GOT

As to description on the specifications of the F940GOT, regard the following items as shown below.

Table:4.6

Item	F930GOT	F940GOT
Screen size	240 W × 80 H dots	320 W × 240 H dots
Memory capacity	256kbyte	512kbyte
Number of characters	15 full-width characters × 5 lines	20 full-width characters × 15 lines

Regard the number of characters as shown above when inputting the objects "Text", "Library Text" and "Ascii" and the text library.

4.7.4 Colors displayed in the F930GOT(-K) and the screen creation software

Table:4.7

F930GOT	DU/WIN-E
White	White
Blue	Black

4.8 Cautions on screen creation in the GOT-F900 Series

This paragraph summarizes cautions on the following objects during screen creation in the GOT-F900 Series. Have in mind the cautions.

Target models

F940WGOT-TWD-E
 F940GOT-SWD-E, F940GOT-LWD-E, F940GOT-SBD-H-E, F940GOT-LBD-H-E
 F930GOT-BWD-E, F930GOT-BBD-K-E

Contents

- 1) Cautions on positions in which the "Touch Key", "Number" and "Ascii" objects are arranged
- 2) Cautions on use of the touch key functions and a key code
- 3) Caution on use of "Use High quality" and "Use of 8 × 6 dot font"

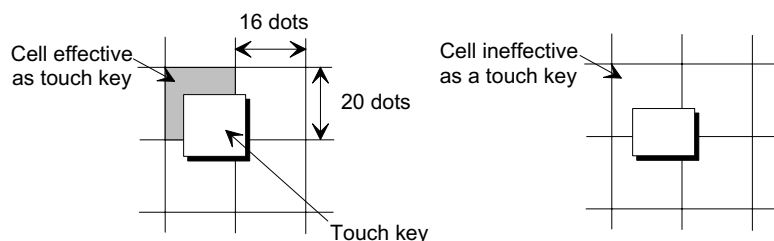
4.8.1 Arrangement of "Touch Key", "Number" and "Ascii" objects

Target objects

Touch Key, Number and Ascii

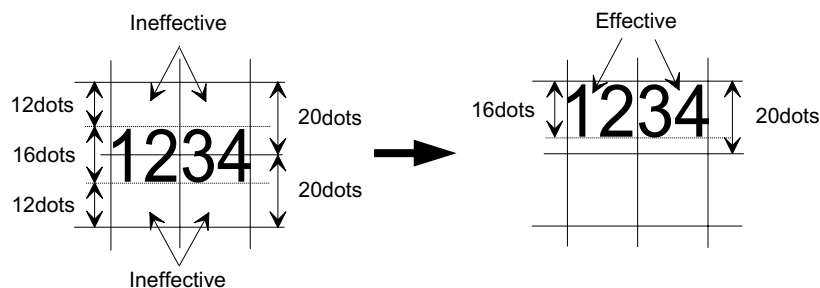
Description

An object can be arranged in an arbitrary position in the unit of dot. The touch panel consists of 20 × 12 cells each of which consists of 16 × 20 dots, and a cell is the minimum unit which recognizes touching. If an object occupies more than a half of a cell both in the vertical and horizontal directions, the cell functions as an effective area.



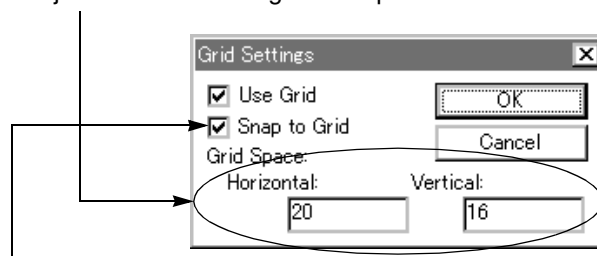
Frequent arrangement

Suppose that the character size in the vertical direction is 16 dots (H: x1) in the "Number" or "Ascii" object. If the object is arranged so that it occupies two cells equally in the vertical direction, the object occupies 8 dots in each of the upper cell and the lower cell. As the result, each cell is ineffective.



Screen creation procedure

- 1) Use the grid display function of the DU/WIN-E software.
Set the grid to the touch key size, and arrange the object while confirming the cell position.



Make "Grid Adsorb" effective with a check mark, and arrange the object while regarding the upper left corner of the grid (cell) as the start point.

- 2) Display the "Touch Key", "Number" and "Ascii" objects in larger size.

4.8.2 Key code and function of touch key

Target object

Touch Key

Description

Two or more functions such as "Switch", "Change Screen" and "Data Setting" can be assigned to each touch key. However, if a key code (except "FFFF" and "FF69") is assigned to a touch key, such functions are disabled.

Because a key code displays the entry code registration screen (for security) or a system screen, a touch key to which a key code (except "FFFF" and "FF69") is assigned acts as a screen changeover key.

The key code "FF69" which resets the entry code can be used together with other functions.

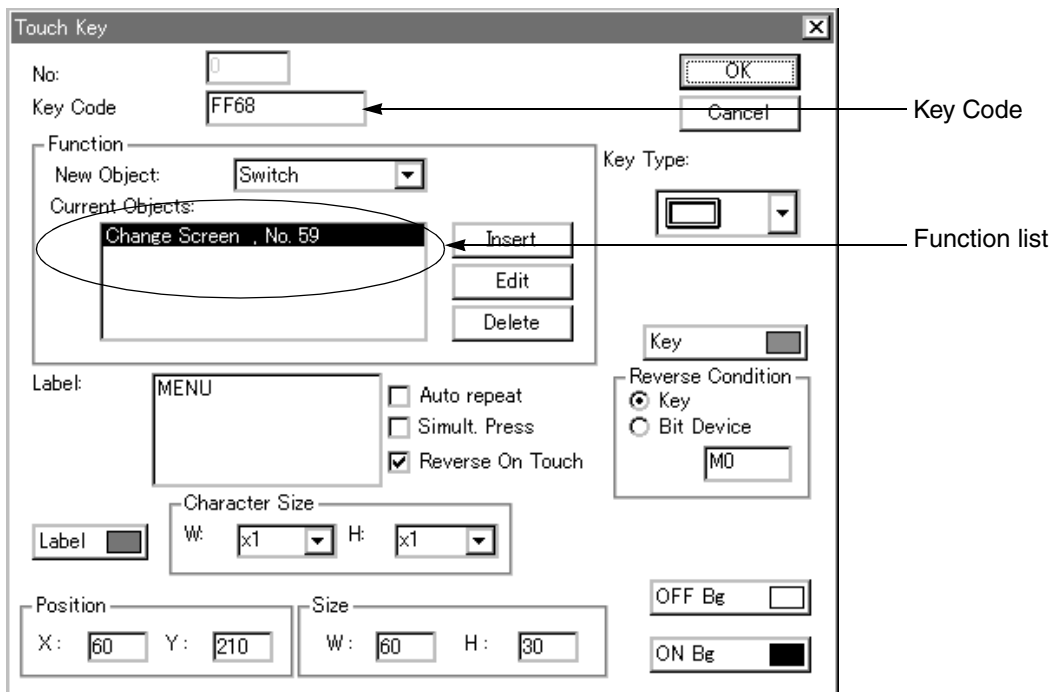
Key code examples

Table:4.8

Key code No.	Function	Function effectiveness
FFFF	Indicates that no key code is assigned.	✓
FF68	Changes over to the entry code registration screen.	—
FF69	Resets the entry code.	✓
Any other No.		—

For the details of key codes, refer to the F940GOT Operation Manual.

Some key codes offer the input function to enter numbers, enter alphabets (ASCII codes), move the cursor, etc. for the "Number" object, the "Ascii" object, the alarm list and the alarm history.



4.8.3 High-quality characters and 6×8-dot font

High-quality characters and 6×8-dot font are supported in products produced in March, 2001 (serial No. 13****) or later when the following OS versions are produced. They are not supported (because the font image data is not added) even if the OS version is upgraded.

OS versions of target models

F940WGOT : Ver. 1.00 or later
F940GOT : Ver. 6.10 or later (including handy GOT)
F930GOT : Ver. 4.10 or later
F920GOT-K : Ver. 1.00 or later

Target objects

High-quality character

Number

The object above is valid when "W" is set to "4" or more and "H" is set to "2" or more in "Size".

6×8-dot font

Text, Library Text, Text Indicator, Label Indicator, Date, Time, Display Status, Alarm History, Ascii, Number and Touch Key

The objects above are valid when "W" is set to "1" and "H" is set to "0.5" in "Size".

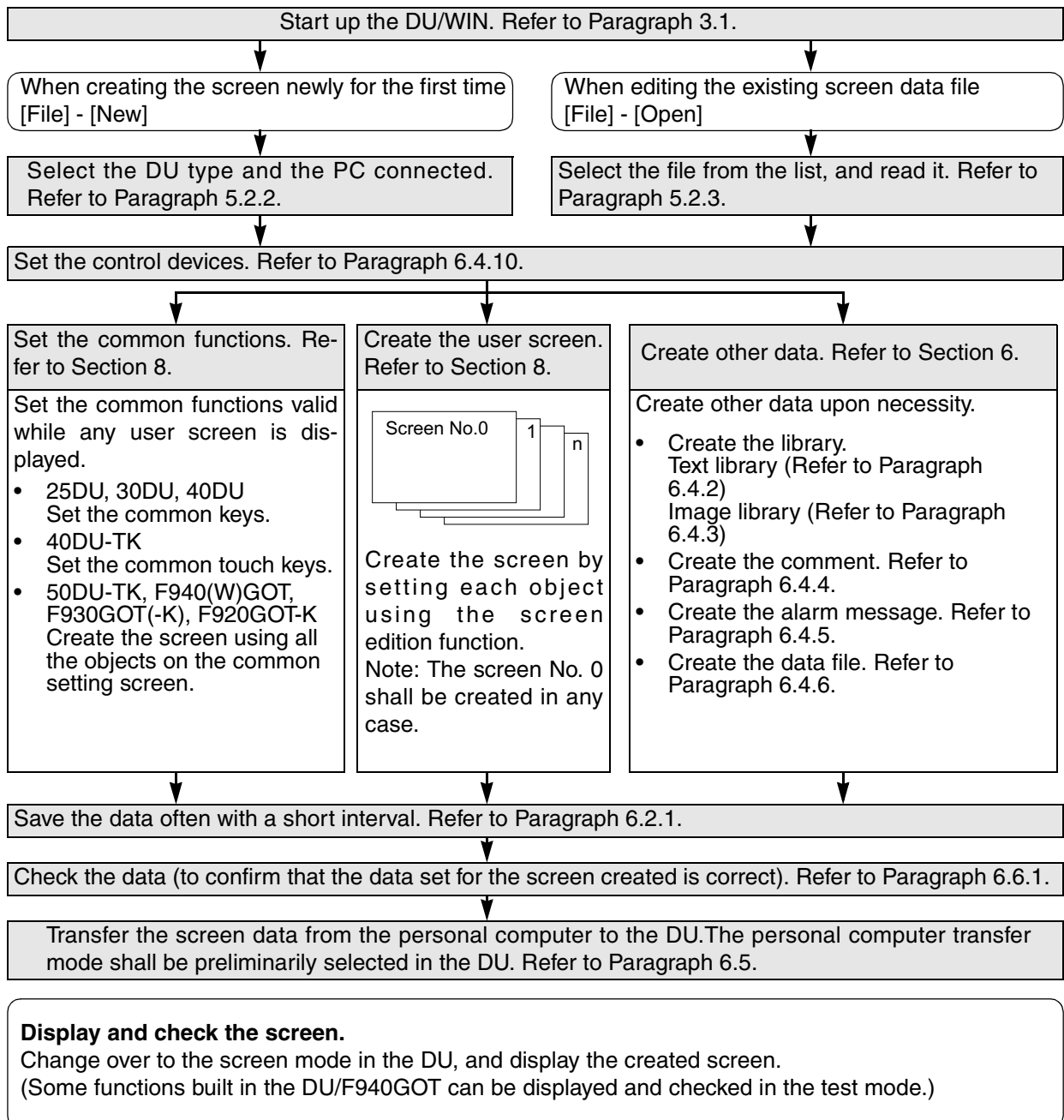
1	Introduction
2	Installation
3	Starting up and Terminating the Program
4	What You Should Know Before Starting Drawing
5	Preparation for Drawing and Basic Operations
6	Menu Bar Functions
7	Common Drawing Operations
8	Object Function Description
9	Related Information

5. Preparation for Drawing and Basic Options

This section describes the flow from startup of the DU/WIN software to the drawing procedure.

5.1 Screen creation procedure

When creating the screen, set the common functions, create the user screen, and set other data upon necessity.



5.2 Let's start to create the screen.

This paragraph describes actual cases to create the screen newly using objects such as texts and images. The preparatory procedure for model setting, etc. to be performed after the software is started up and before the screen is created is described here.



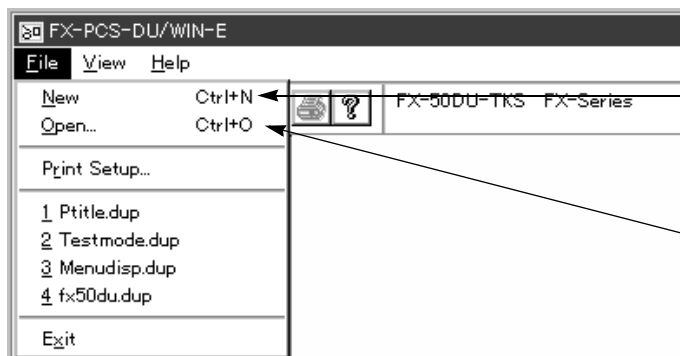
Cautions before creating the screen

- In the examples adopted in this paragraph, the 50DU-TK is connected. When another DU unit is connected, some settings may be different. Have in mind that the following items are different when another DU unit or another PC unit is connected.
 - 1) Though bit devices (X, Y, M, T, C and S) and word devices (T, C and D) are described in the specification of a device in the examples here, available devices vary depending on a connected PC.
 - 2) The touch key setting and the ten-key display function shown here indicate the case where the F940GOT, the 50DU-TK or the 40DU-TK is connected.
 - 3) The procedure to change over the screen from a PC is partially different in another DU unit.
 - 4) The vertical direction of characters and another contents can be displayed in the half-width size only in the F940GOT, the 50DU-TK and the 25DU(-P).
 - 5) In the color pallet used to specify the character color, the background color, etc., 8 colors are displayed only when the FX-50DU-TKS-E or the F940GOT-SWD-E is selected.

5.2.1 Preparation for drawing (Screen window)

This paragraph describes the procedures to create the screen newly and to read and edit the existing screen data.

1. Suppose that the basic screen (initial screen displayed when the DU/WIN software is started up) is displayed.

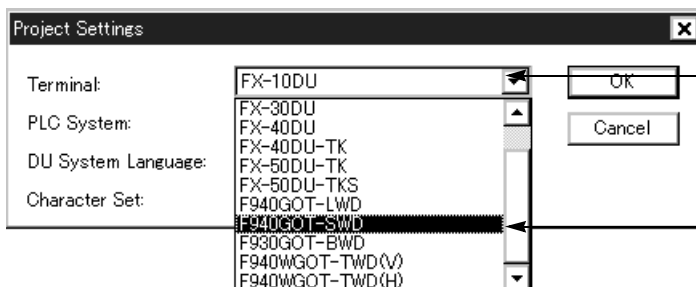


2. Click "File" on the menu bar.

When creating the screen data for the first time, select and click "New".
 ☞ Paragraph 5.2.2

When editing the registered screen data, select and click "Open . . .".
 ☞ Paragraph 5.2.3

3. Click to select "New".
 Click "New" when creating the screen newly or when reading and editing the existing screen data.
4. The Project Settings dialog box is open. ☞ Paragraph 5.2.2
 "Project" indicates the data to be created from now on.



When this button is clicked, the DU list is displayed.

Select the DU unit (F940GOT-SWD here) for which a new screen is to be created, and click it.

5. Select a PC connected to the DU. ¶ Paragraph 5.2.2

6. Click "OK".
7. Select the screen No. to be created. ¶ Paragraph 5.2.5
Open the Screen window using the procedure 1) or 2) described below.

In the initial status, the common screen, the 0 screen (No. 0) and the system screens (No. 500 and later) are displayed in the list.

In the F920GOT-K, the F930GOT(-K) and the F940(W) handy GOT, the system screens start from the No. 1001.

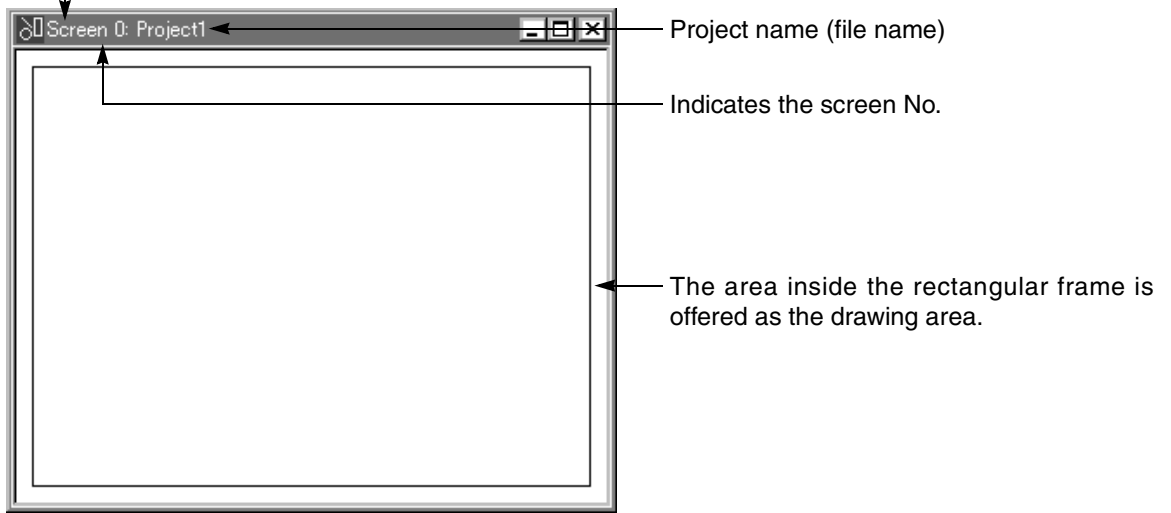


The screen No. 0 is displayed for the first time after the power is turned on. If this screen is not created, an error occurs.

- 1) To select the screen No. 0
Point the mouse pointer, and double-click it. The DU screen image window is open.
- 2) To add a new screen ¶ Paragraph 5.2.5
Click the "New" button. The "Screen Header" window is open.

8. The Screen window which allows to set objects is displayed.

Indicates that this is the Screen window.



Now, you can lay out the screen using objects.

The actual operating procedures to create screens using representative objects are described in "5.3 Let's display characters" and later paragraphs. Refer to them when using this software for the first time.

List of screen creation examples using representative objects

- Text..... 5.3 Let's display characters
- Touch key (switch) 5.4 Let's turn on output using touch key switch
- Number 5.5 Let's display numeric value (T, C, D)
- Change screen (by PLC)..... 5.6 Let's change over screen

5.2.2 Creating the screen data newly [New]

After selecting “New”, select the DU type and the equipment to be connected from each drop-down list box. The contents set here are saved in the DU/WIN software, and automatically selected when the DU/WIN software is started up next time.

The screenshot shows the 'Project Settings' dialog box with the following fields and callouts:

- 1) Terminal:** Select the DU model name. (Callout points to the 'FX-10DU' dropdown)
- 2) PLC System:** Select the PC or equipment connected to the DU. (Callout points to the 'FX-Series' dropdown)
- 3) System Language:** Select the language in which the DU system menu is to be displayed. (Callout points to the 'Japanese' dropdown)
- 4) Character Set:** Select the character font displayed on the screen. (Callout points to the empty dropdown)

Buttons for 'OK' and 'Cancel' are also visible.

Corresponding DU and setting list

Table:5.1

1)Terminal	2) PLC System									
	MELSEC -FX	MELSEC -QnA,Q	MELSEC -A	OMRON -C	FUJI -N	AB -SLC 500	AB- Micro Logix	SIEMENS -S7 300	SIEMENS -S7 200	General- purpose communi- cation
FX-10DU	✓	—	—	—	—	—	—	—	—	—
FX-25DU	✓	—	✓	—	—	—	—	—	—	—
FX-30DU	✓	—	✓	—	—	—	—	—	—	—
FX-40DU	✓	—	✓	—	—	—	—	—	—	—
FX-40DU-TK	✓	—	✓	—	—	—	—	—	—	—
FX-50DU-TK	✓	—	✓	✓	✓	—	—	—	—	✓
FX-50DU-TKS	✓	—	✓	✓	✓	—	—	—	—	✓
F940GOT-LWD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F940GOT-SWD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F930GOT-BWD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F930GOT-BWD(V)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F930GOT-BWD(H)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F940WGOT-TWD(V)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F940WGOT-TWD(H)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
F920GOT-BBD5-K	✓	✓	✓	—	—	—	—	—	—	—

1) Terminal	2) PLC System			3) DU System Language	4) Character Set
	FREQROL	FX-GM	Matsushita-FP		
FX-10DU	—	—	—	—	—
FX-25DU	—	—	—	—	—
FX-30DU	—	—	—	—	—
FX-40DU	—	—	—	—	—
FX-40DU-TK	—	—	—	—	—
FX-50DU-TK	—	—	—	—	—
FX-50DU-TKS	—	—	—	—	—
F940GOT-LWD	✓	✓	✓	✓	✓
F940GOT-SWD	✓	✓	✓	✓	✓
F930GOT-BWD	✓	✓	✓	✓	✓
F930GOT-BWD(V)	✓	✓	✓	✓	✓
F930GOT-BWD(H)	✓	✓	✓	✓	✓
F940WGOT-TWD(V)	✓	✓	✓	✓	✓
F940WGOT-TWD(H)	✓	✓	✓	✓	✓
F920GOT-BBD5-K	—	—	—	✓	✓

- The mark "-" in the table above indicates the function not available in the selected DU. For such a function, the drop-down list box name is displayed in gray and cannot be selected.
- When "3) DU System Language" is set to "English", "4) Character Set" can be set to "Japanese", "West Europe" or "Chinese (Simplified)". The screen data created in each language can be displayed on the display screen (user screen) in the font selected in "Character Set".



- The equipment ("2) PLC System" in the table above) connected to the DU may not be available depending on the DU version.
- For the details, refer to the description on connection to an external equipment in the handy manual supplied together with the DU.
- For the details of the GOT-F900 Series, refer to the description on connection in the GOT-F900 SERIES GRAPHIC OPERATION TERMINAL HANDY MANUAL (COMMON CONNECTION).
- The following graphic operation terminals are not displayed in "1) DU Type". Instead, select the corresponding DU type shown below.

Table:5.2

DU model name	1) Terminal
F930GOT-BBD-K-E	F930GOT-BWD
F943GOT-LWD-E	F940GOT-LWD
F943GOT-SWD-E	F940GOT-SWD
F940GOT-LBD-H-E/F943GOT-LBD-H-E	F940GOT-LWD
F940GOT-SBD-H-E/F943GOT-SBD-H-E	F940GOT-SWD



When modifying the project setting later

Select "View", "System Settings" and "Project Settings", then modify the setting.

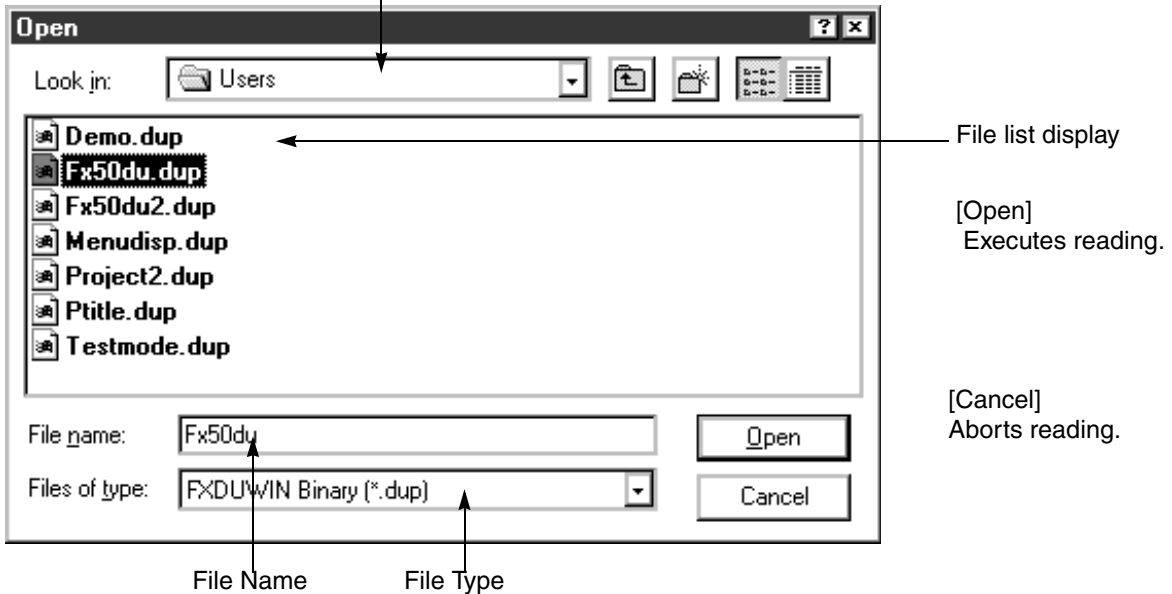
- Restriction in the F940WGOT-TWD (lateral)
In this screen creation software, all screens can be created. However, setting of division into 2 or 3 portions is not available.

5.2.3 Reading and editing the existing screen data (Open)

When “Open” is selected, the screen data file list is displayed. Select the file name to be edited.

File read dialog box

Select the directory or drive name to be displayed in the list.



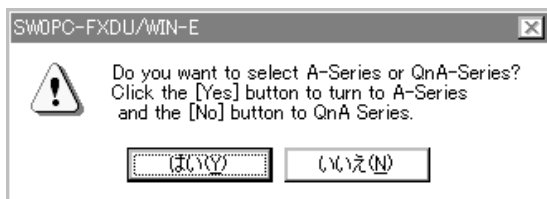
Description on the functions of the buttons

[File Name] Enter the file name to be read using the keys or click the file name in the file list, then click this button.

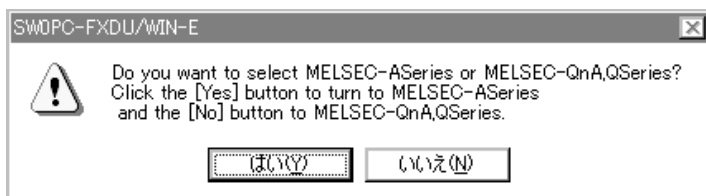
[File Type] Select the file type in accordance of the save format of the drawing data to be read. When “All Files (*.*)” is selected, all the files saved in the directory currently selected are displayed.

Ver2.3~ ▶ **Cautions on reading the screen data**

When the screen data is read from the GOT-F900 main body or an ITH file, the dialog box to select the A or QnA Series appears (except DUP and DUA files stored using the DU/WIN-E). Select the connected PLC Series. If a wrong Series is selected, devices may change.



Ver2.4~ ▶ When a screen data file saved in the conventional version is opened in this version, the question dialog box shown below appears if the connected PLC Series is A, QnA or Q.



5.2.4 Readable files

This paragraph describes how to read a file saving the drawing data (GDT format) created by the DOS version software of the FX-PCS-DU/AT-EE (English version for PC-AT personal computer) or a file saving the screen data (DUP format) of this software.

By selecting "File" and "Open", the file list display window is displayed.

By selecting "File Type", the drawing data in accordance with the file format shown in the table below can be selected and read.

Readable file formats

Table:5.2

File format (extender)	Data type
DUP	File saved by the DU/WIN (this software)
DUA	File saved in the text format by the DU/WIN (this software)
ITH	File saved in the Intel hex format (ROM writer)
GDT	File created by the DOS version drawing software

Caution on reading an ITH file

When reading a file saved in the ITH (Intel HEX) format, check whether the project setting (DU type) selected at the time of save is the GOT Series or the DU series, then select the Series in which the model used for save is included.

For example, when reading a file of the screen data of the F930GOT saved in the ITH format, select "GOT (F930GOT)" as the DU type in "New".

Caution on reading a GDT file

A file saved in the GDT format was able to be read only when it was data of the data access unit (DU Series).

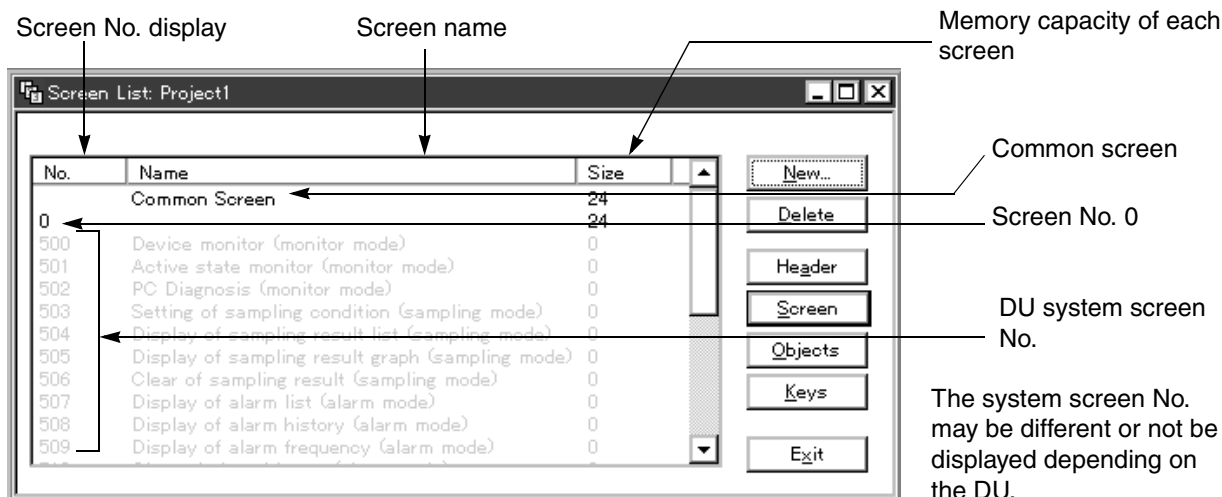
Ver2.5 ~ ▶

From Ver. 2.5, data of the graphic operation terminal (GOT-F900 Series) can be read also (as far as it is saved using the DU/WIN-E). (Data saved using the DOS version software cannot be read.)

5.2.5 Selecting the screen No. and performing additional deletion (Screen List)

When the screen is newly created or the existing screen data file is read, the screen list window is displayed. When modifying the screen, point the screen No. in the list to be displayed using the mouse, then double-click it.

Screen list window



Description on functions of the buttons

- [New...] Adds the screen No. ¶ Paragraph 5.2.6
When this button is clicked, the screen header window is displayed. Set the screen No., the screen name, the background color and the screen protection function to be added.
 - [Delete] Deletes the screen No. (user screen exclusively) selected in the screen list.
When this button is clicked, the selected screen is deleted.
Pay rigid attention when using this button.
 - [Header] Modifies the screen No. and the screen name of the existing screen. ¶ Paragraph 5.2.6
-
- [Screen] Displays the screen edition window for the screen No. selected in the screen list to allow creation and modification of the screen display.
This button functions as if the screen No. is selected using the mouse and doubleclicked.
 - [Objects] Displays the object list set on the active screen selected. ¶ Paragraph 5.2.7
The objects not displayed on the DU screen can be set by clicking this button to display the object list window.
The objects in the list can be edited, added or deleted.
By dragging and dropping an object, the order of objects in the list can be modified.
The object displayed at the top in the object list is displayed at the bottom of the screen.



Make sure to create the screen No. 0.

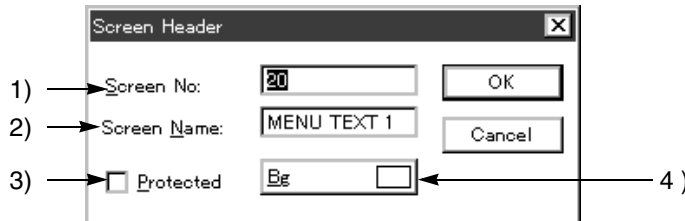
When the power of the DU is turned on, the screens are displayed starting from the user screen No. 0.
If the screen No. 0 is not present, an error occurs.
This type of error does not occur when the screen data check is performed by selecting "Other" and "Project Check".

5.2.6 Adding and changing the screen No. (Screen Header)

When the New or Header button is selected on the Screen List window, the Screen Header window is displayed and the user can create or change the screen No. entered in "Screen No." 1).

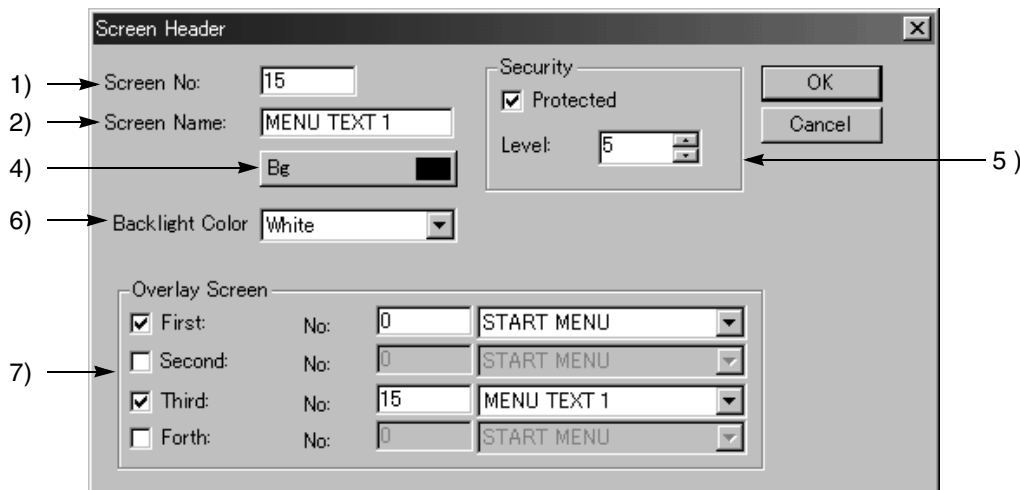
10DU, 25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

For the screen in the 10DU, refer to "8.14 Setting the objects related to the FX-10DU-E".



The functions "Protected" and "Bg" are not offered in the 10DU.

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Description on the input areas

- 1) Screen No.
When the New button is selected, an unused screen No. is automatically assigned.
When the Header button is selected, the screen header of the screen No. selected in the screen list is displayed, and the user can select another screen No.
- 2) Screen Name
A name can be assigned to each screen. The name assigned here can be used when the screen changeoverdestination is selected using "Call Screen" 6) or a screen changeover object.
- 3) Protected
When a screen for which "Protected" is set to ON is tried to be displayed by the screen changeover procedure, a window is displayed to request the input of No. set by selecting "View", "System Settings" and "Entry Code". When a code entered by the user is correct, the specified screen is displayed.

30DU, 40DU, 40DU-TK and 50DU-TK

"Protected" can be set to ON or OFF.

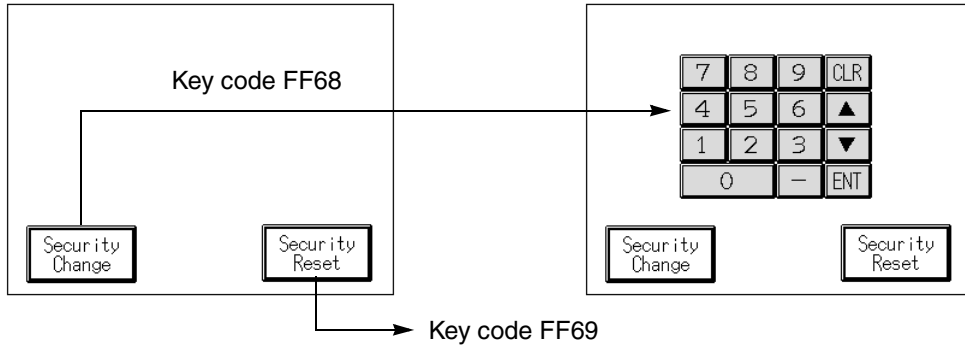
- 4) Bg
Select the background color of the entire screen.
The background color can be changed also on the object setting tool screen.

5) Security

F940GOT

When a screen for which "Protected" is set to ON is tried to be displayed by the screen changeover procedure, the specified screen is displayed when its level is equivalent to the level of the security code set by selecting "View", "System Settings" and "Entry Code".

To change the level, display preliminarily the password input keyboard for level change using the touch key (to which a key code is set), change the level, then change over to the screen on which the protection function is set.



When "Protected" is set to ON (A check mark is displayed in the ON status.), the level can be set within the range of 0 to 15.

When the level is set to 0, the protection function is invalid as if "Protected" is set to OFF.

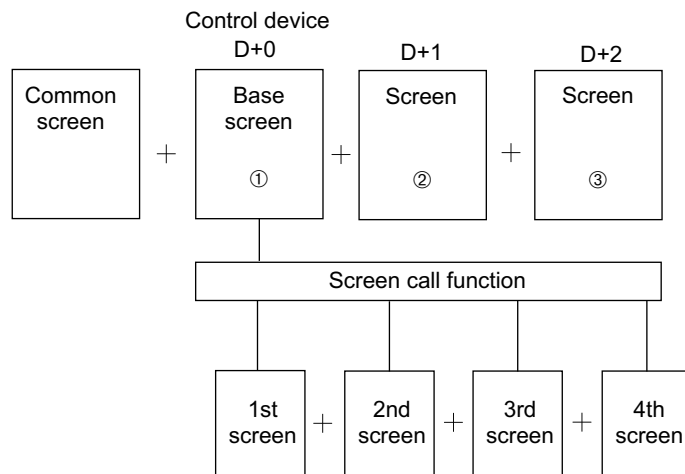
6) Back light color

Select the back light of the F920GOT-K between white and red.

(In other GOT-F900 units, the back light color is fixed to gray and cannot be selected.)

7) Call Screen

When the set screen is displayed as the base screen (which is specified by the control device "D+0"), the first to the fourth screens are overlaid.



A screen on which the screen call function is set is not displayed as the screen ② nor the screen ③.

5.2.7 Adding, deleting and sorting objects (Object List)

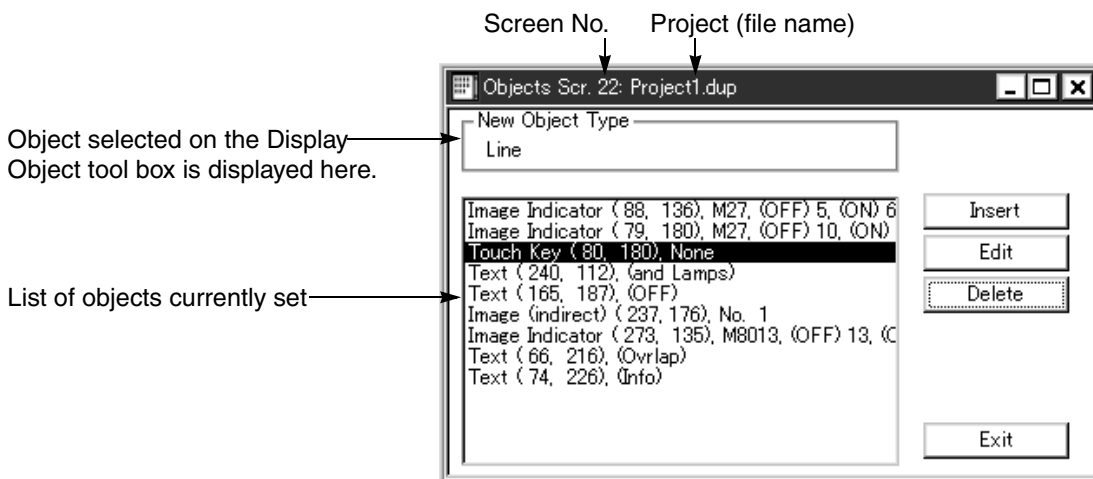
The list of objects set on the selected screen can be displayed. In the list, objects can be edited, added and deleted.

Objects which are not displayed on the screen can be set by displaying the Object List window.

By dragging and dropping an object, the order of the object in the list can be changed.

An object shown in an upper position in the list is displayed in a lower position on the screen.

Object List window



Object selected on the Display Object tool box is displayed here.

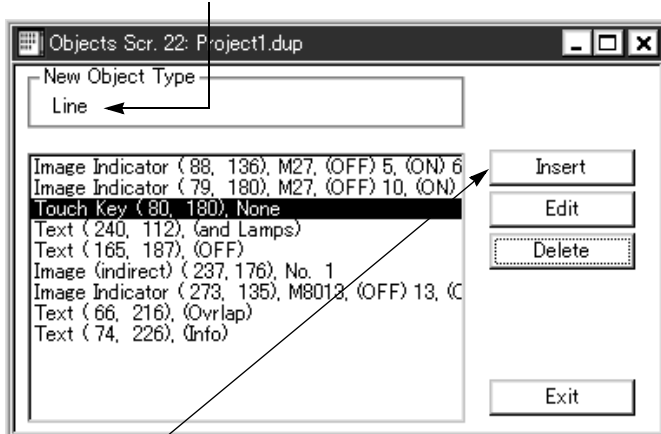
List of objects currently set

- [Insert] Allows to add any object (including undisplayed ones).
 ☞ For the details, refer to the next page and "7.1 Rule on object selection".
- [Edit] Allows to change the setting of an object selected in the object list by opening the Object dialog box.
 Instead of selecting this button, a desired object to be changed in the list can be double-clicked to be selected.
- [Delete] Deletes an object selected in the object list.
 Pay rigid attention to handling of this button. Immediately when this button is clicked, the selected object is deleted.

Addition

This paragraph describes the operating procedure to add a new object.

1. Select an object to be added from the tool bar or the object tool box. The selected object is displayed in the area "New Object Type".



2. Click the "Insert" button. The object dialog box is open.

Deletion and copy

The operating procedure is equivalent to that for objects displayed on the Screen window. For the details, refer to "6.3.1 Deleting, transferring and copying objects (Screen window)".

Deletion, copy, edition and transfer of two or more objects

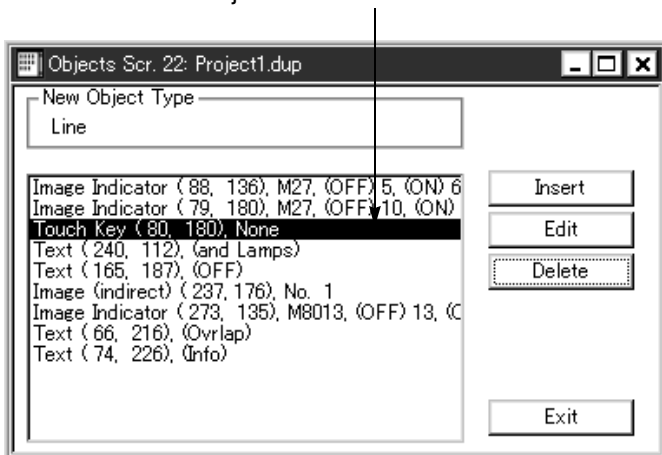
The operating procedure to select two or more objects shown in the object list is equivalent to that for objects displayed on the Screen window.

For the details, refer to "6.3.1 Deleting, transferring and copying objects (Screen window)".

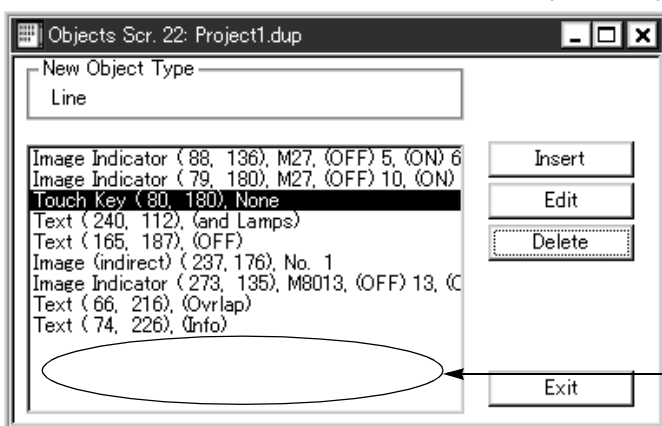
Sorting (transfer) of objects

This paragraph describes the operating procedure to change the object registration order on the Object List window.

1. Point to select an object to be transferred.



2. Drag it to the transfer destination using the mouse. At this time, the mouse pointer is changed from arrow-shape into document-shape.
3. Release the mouse button in the object in the transfer destination. Make sure that the transfer destination is a line on which an object is displayed. The mouse pointer cannot be moved to a vacant line on which no object is displayed.

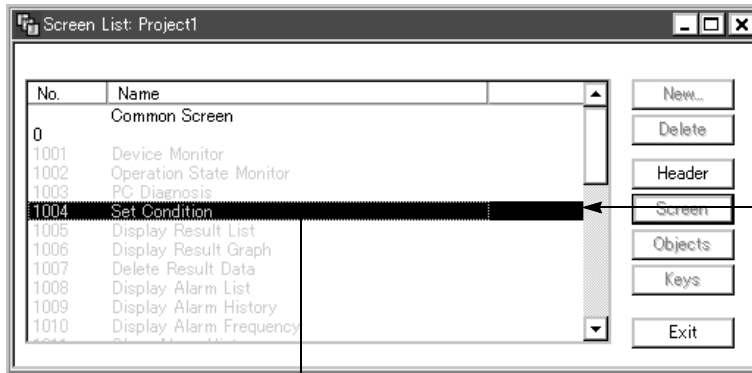


The mouse pointer cannot be moved to this vacant area.

5.2.8 Setting the security for system screens

The security level can be set for each system screen built in the GOT-F900.
 (If the OS version of the GOT-F900 does not support this function or in the conventional specifications, the security level set for user screens is fixed to 15.)
 The security level can be set from the list on the screen list window.

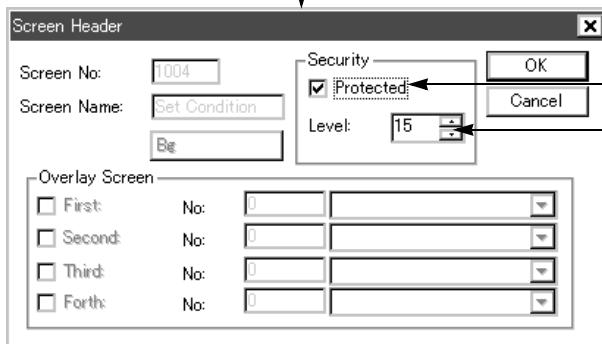
Screen list window



From the list, select a system screen for which the security level is to be set.

Click the [Header] button.

Screen header



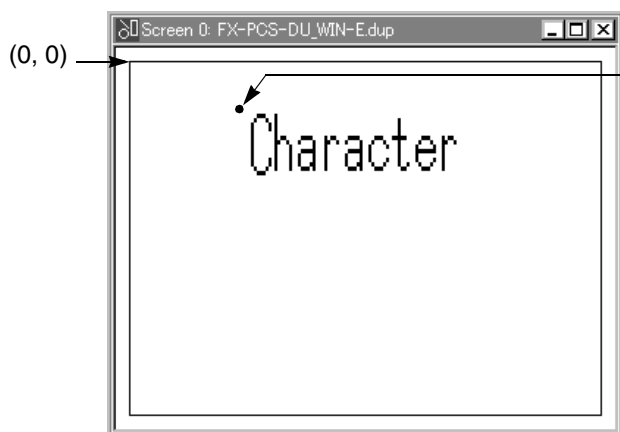
Put the "✓" mark to "Protected".

Set the security "Level".

Only the "Security" field can be set.

5.3 Let's display characters

This paragraph describes the procedure to display characters on the display screen.



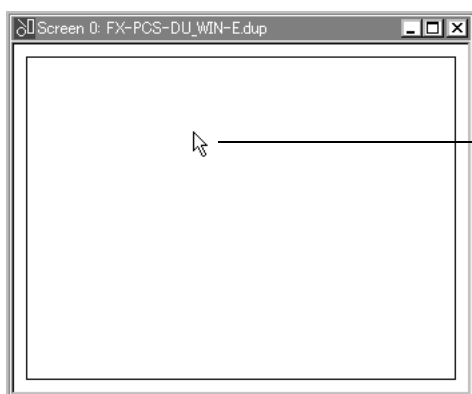
Example of created screen
 Start point (X: 80, Y: 32)
Text Characters: Character
 Character size: W: x2, H: x2

Operating procedure (Display the screen window in advance while referring to Paragraph



1) Left-click "Object" on the tool bar.
 Point "Text" using the mouse cursor. When the submenu appears on the right side, point and left-click "Text".

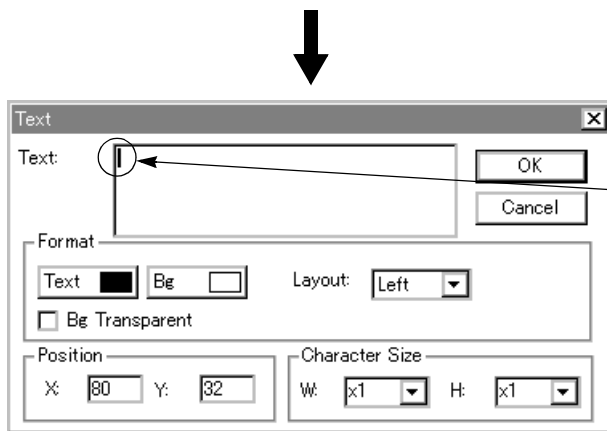
Submenu



2) Put the mouse cursor at a desired start point on the screen window, and right-click it.

The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window.
 (After creating a text, you can move it or change its size using the Text dialog box or the mouse.)

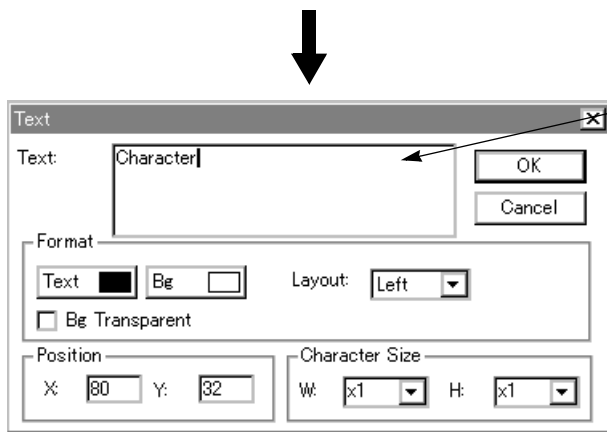
(To next page)



3) The dialog box appears.

4) The cursor is flickering in the text input area.

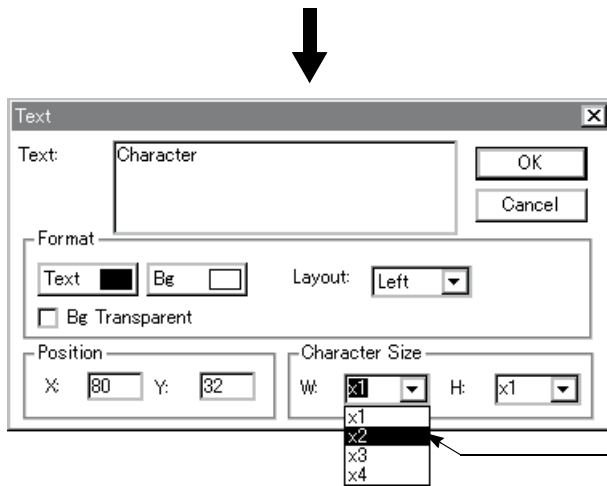
☞ Paragraph 8.1.1



5) Input characters to be displayed.

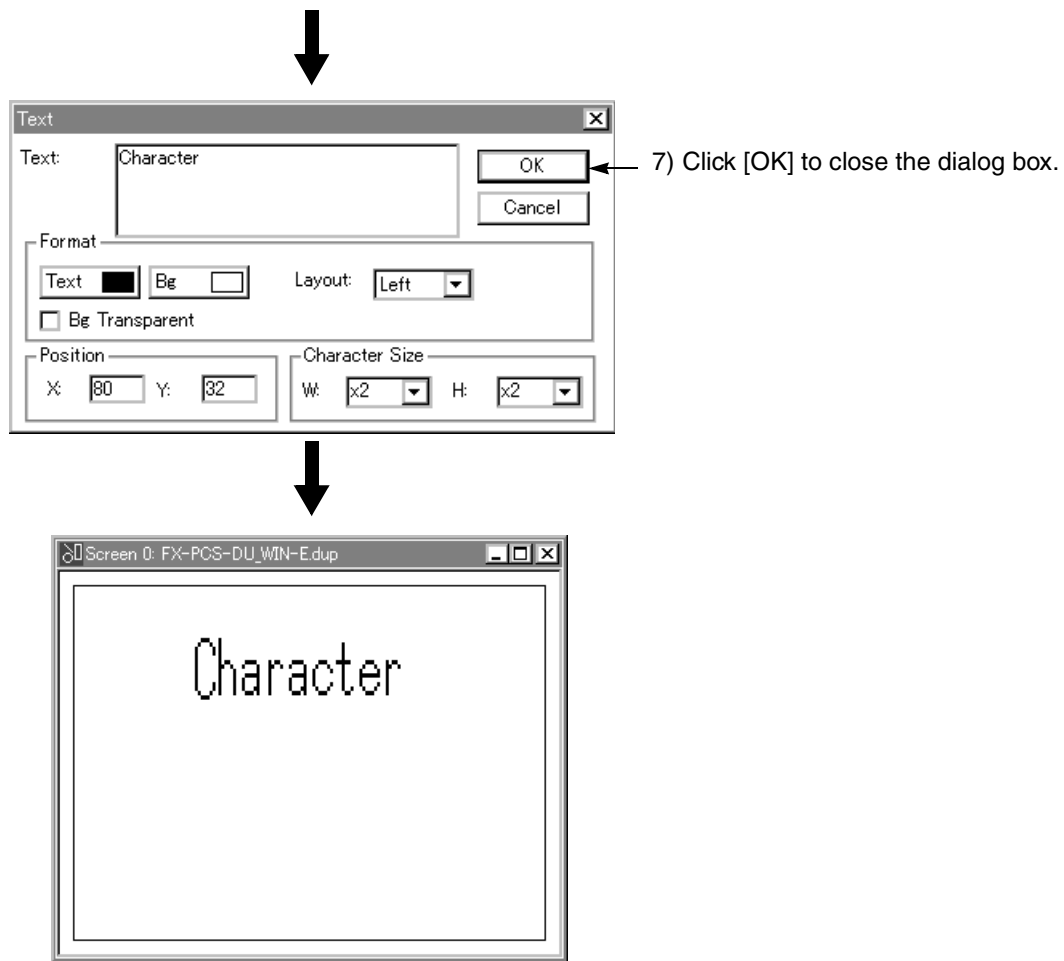
Example: Character

Input "C", "h", "a", "r", "a", "c", "t", "e" and "r".



6) Set "Character Size" to "W: x2" and "H: x2".

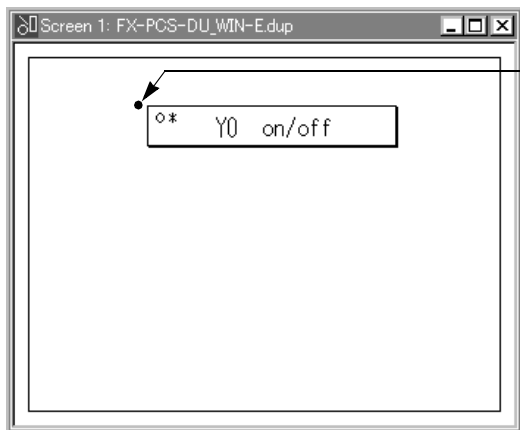
(To next page)



5.4 Let's turn on output using touch key switch

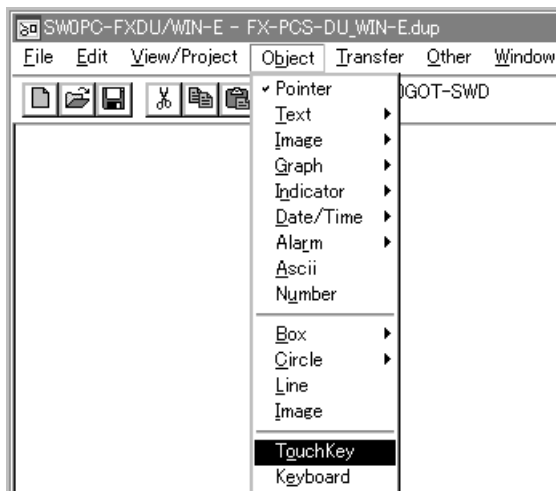
In some DU units, touch keys (switches) can be created at arbitrary size in arbitrary positions. In other DU units (including the F940GOT), mechanical keys (such as ten-keys) are provided. This paragraph describes the procedure to set a touch key which turns on the output Y0 of the PLC when pressed.

Example of created screen

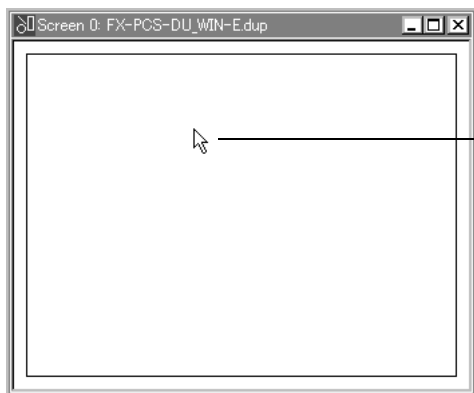


Start point (X: 80, Y: 32)
 Touch Key Label: Y0 on/off
 Key Type: Single frame (shaded)
 Function: Switch
 DU Output = Y0
 Operation: Momentary

Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)

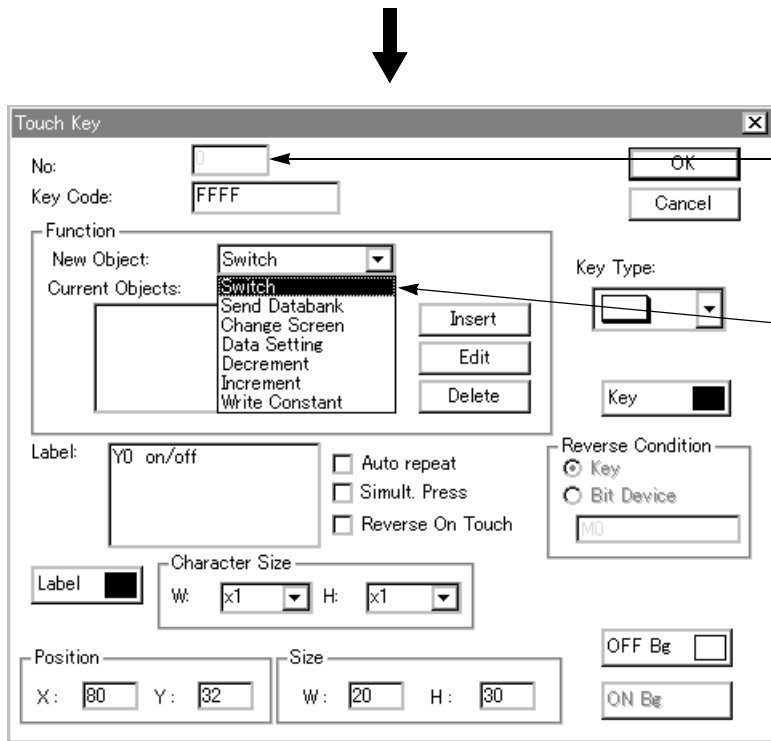


1) Left-click "Object" on the tool bar.
 Point and left-click "Touch Key".

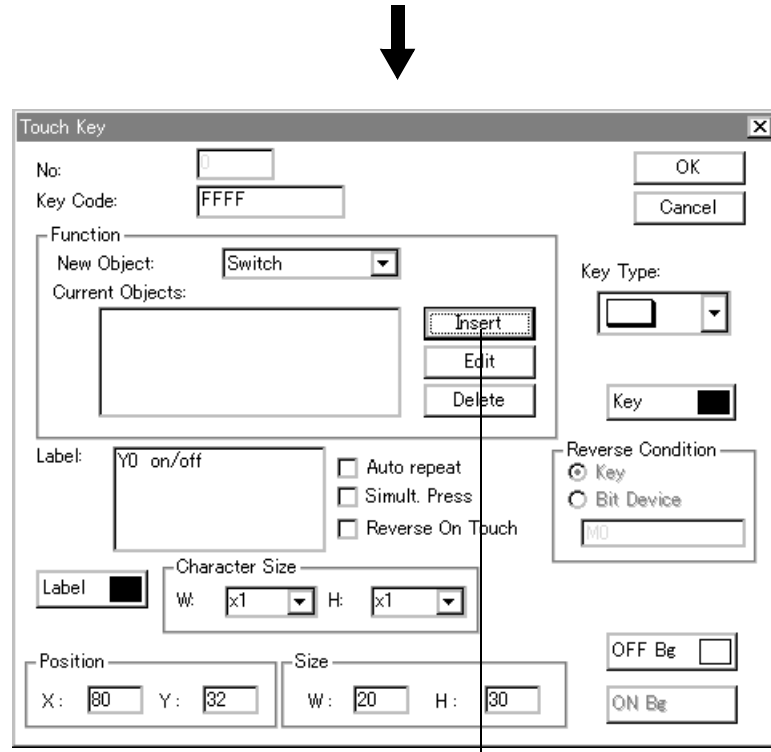


2) Put the mouse cursor at a desired start point on the screen window, and left-click it.
 The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window.
 (After creating a touch key, you can move it or change its size using the Touch Key dialog box or the mouse.)

(To next page)

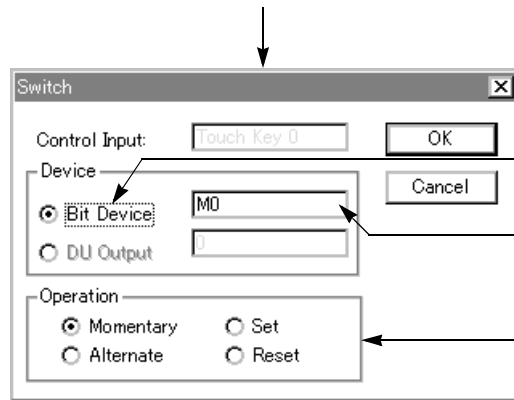


- 3) The dialog box appears.
 - 4) To "No.", a serial No. beginning with "0" is automatically assigned for identification of each touch key.
 - 5) In "New Object", select "Switch". Click the new object display area if "Switch" displayed there. Or click the [▼] button to display the dropdown menu, then select "Switch" on the menu.
- ☞ Paragraph 8.11



- 6) Click the [Insert] button. Next, assign the object selected in "New Object" to a touch key.

(To next page)

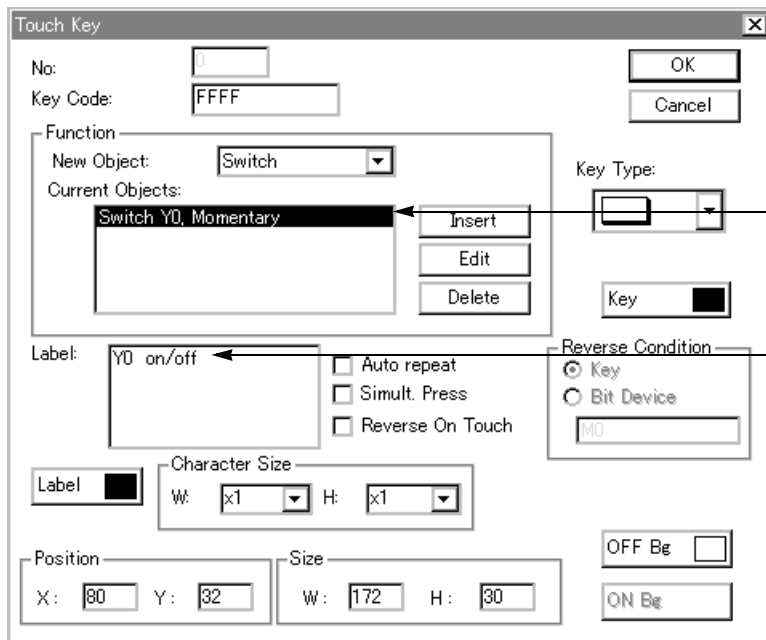


7) The Switch dialog box appears.

8) Click "Bit Device" to turn on the radio button (●).

Input the bit device Y0 of the PLC to turn on.

In "Operation", select "Momentary". Click the [OK] button to close the dialog box.



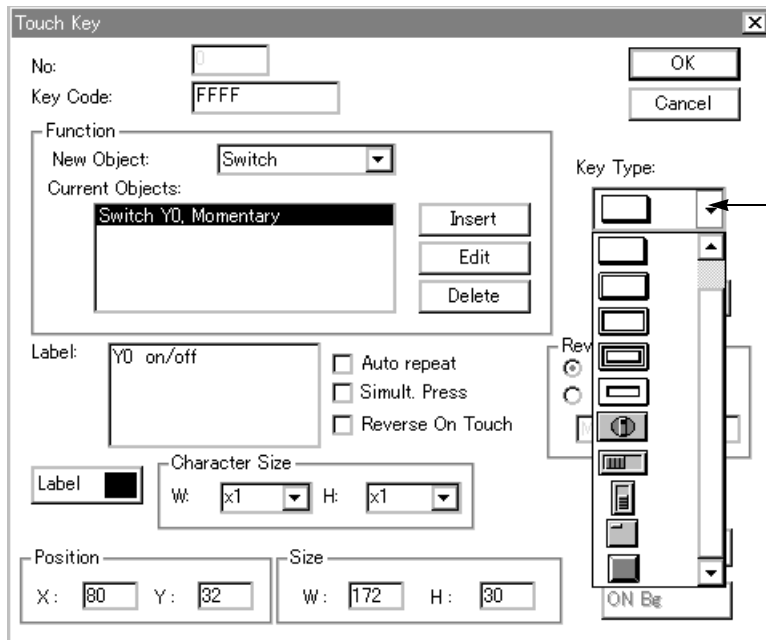
In the displayed current object list, the switch function is assigned to the touch key.

9) Input the characters to be displayed on the touch key.

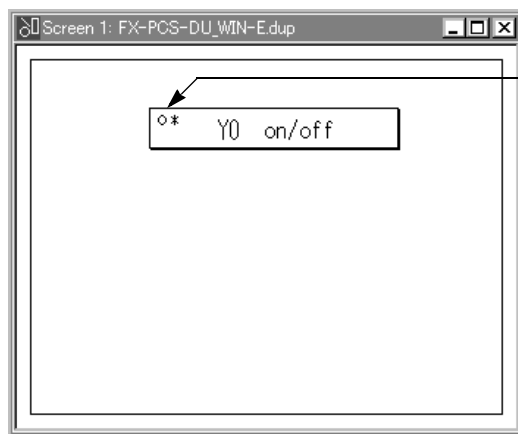
Example: Y0 on/off

In the 40DU-TK in which the label function is not provided, overlay the touch key and the "Text" object.

(To next page)



10)As the key type, select "shaded single frame" (the second symbol from the top). Click the key type display area if the shaded single frame is displayed there. Or click the [▼] button to display the dropdown menu, then select the shaded single frame.

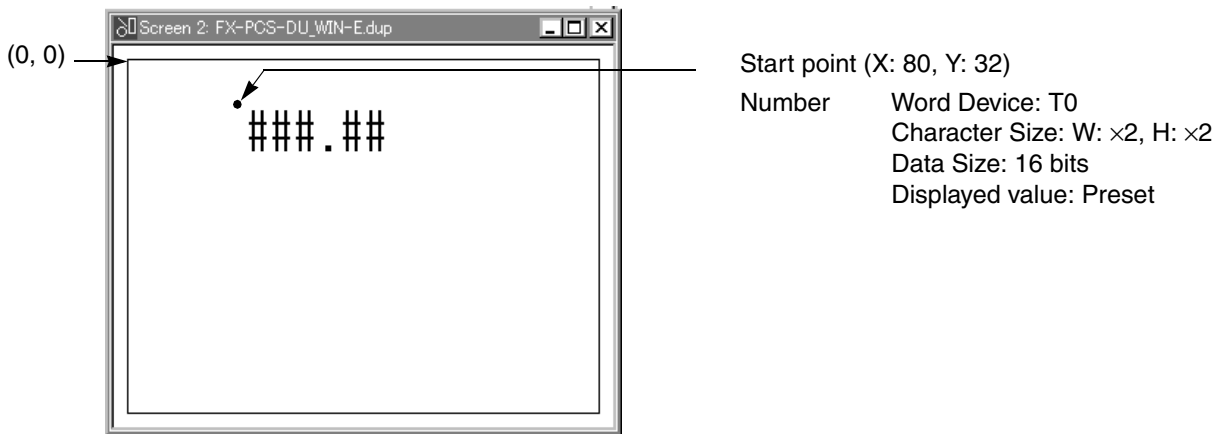


"0" indicates the touch key No.
 "*" (asterisk) indicates that one or more functions are set.
 If no function is set, "*" is not displayed.

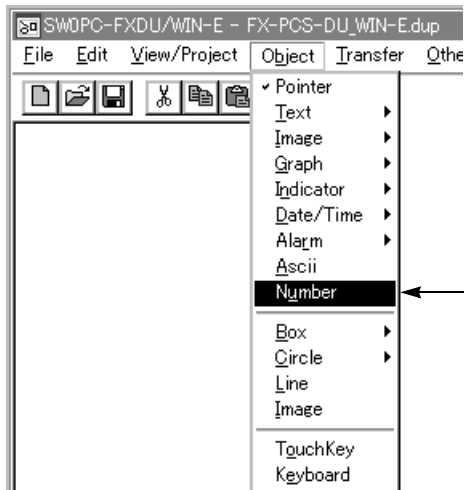
5.5 Let's display numeric value (T, C, D)

This paragraph describes the procedure to display the current value and the preset value of word devices such as timer (T), counter (C) and data register (D) of the PLC.

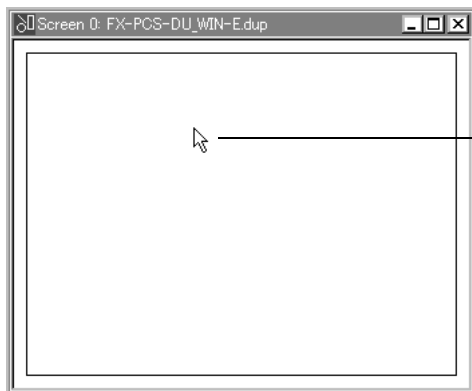
Example of created screen



Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)

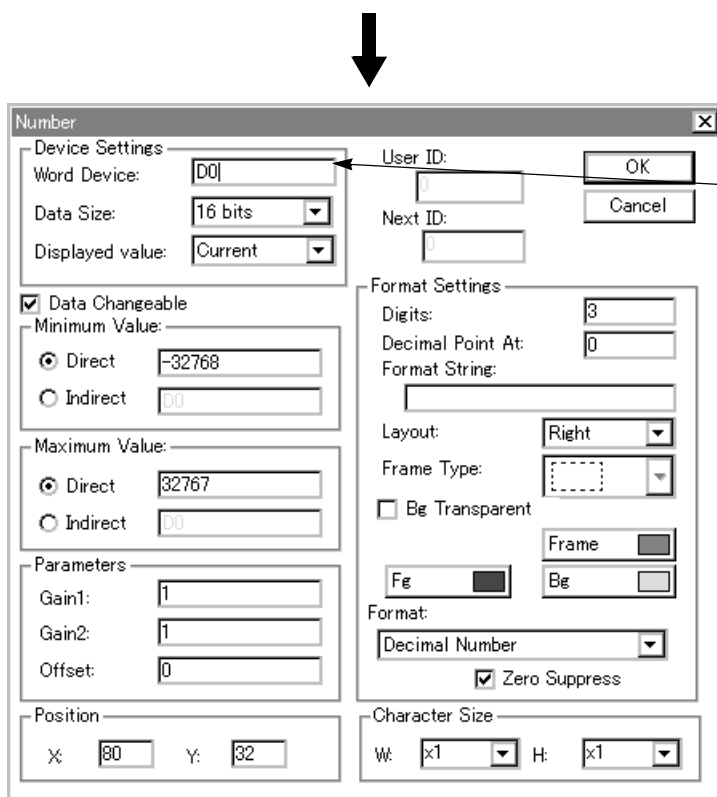


1) Left-click "Object" on the tool bar. Point and left-click "Number".



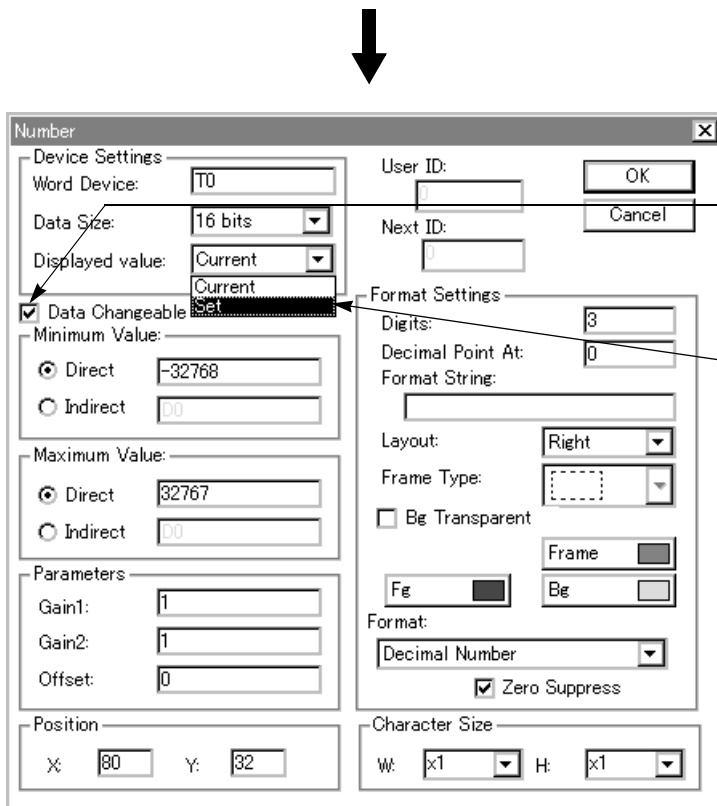
2) Put the mouse cursor at a desired start point on the screen window, and right-click it.
 The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window.
 (After creating a number, you can move it or change its size using the Number dialog box or the mouse.)

(To next page)



3) The dialog box appears.

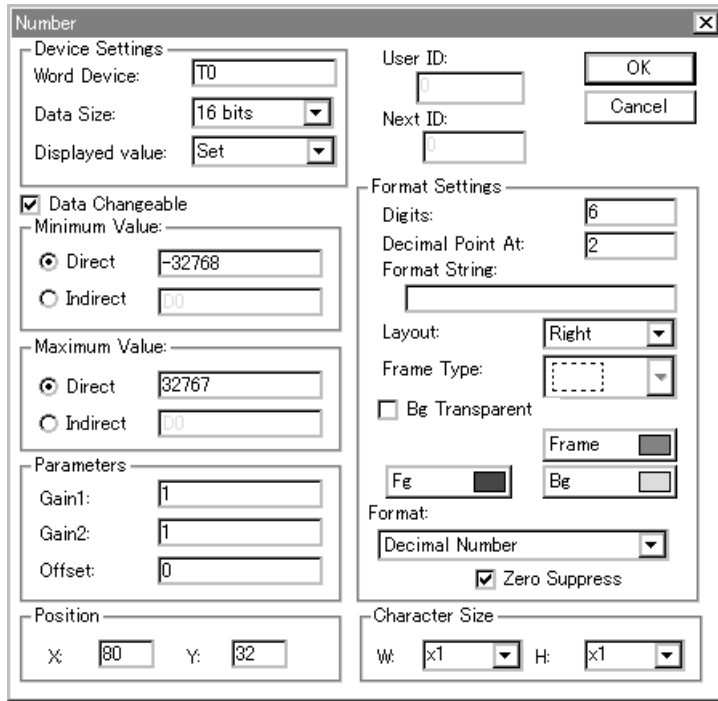
4) Input the word device.
Click the input field.
When the cursor starts to flicker,
input the word device (T0) to be
displayed or changed on the screen.



5) If you would like to change the
numeric value using the ten-keys,
click to check the check box to turn
on "Data Changeable".

6) Set "Displayed value" to "Preset".
Click the displayed value display
area if "Preset" is displayed there.
Or click the [▼] button to display the
dropdown menu, then select "Preset"
on the menu.
Only "Current" is available for a data
register.
Either one between "Current" and
"Preset" can be selected for a timer
and counter.

(To next page)



7) Input "6" to "Digits".
Click the input area for the number of all digits. When the cursor starts to flicker, input "6".

8) Input "2" to "Decimal Point At".
Click the input area for the number of digits after the decimal point. When the cursor starts to flicker, input "2".

Concept of the number of all digits and the number of digits after the decimal point

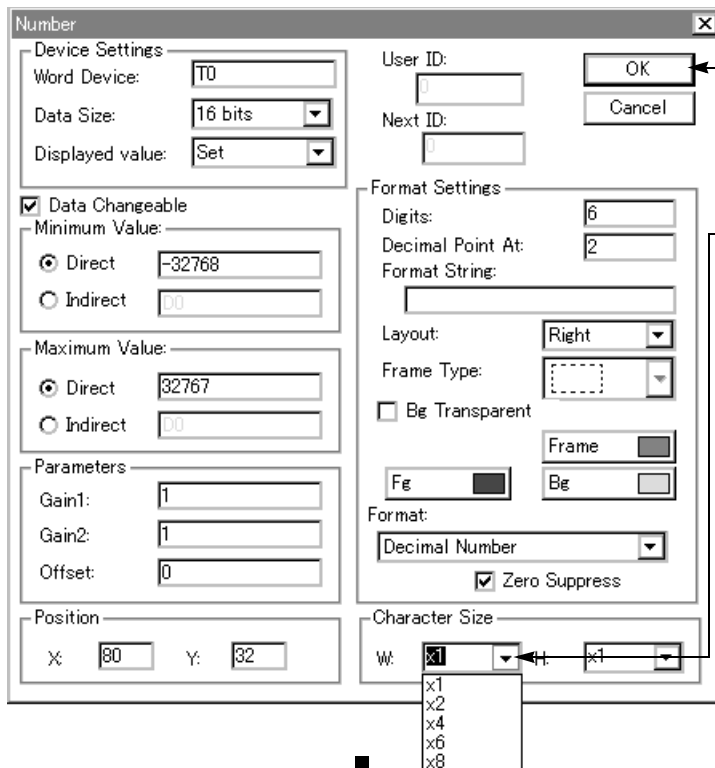
Example:

Number of all digits (Digits) = 7

1234.56

Number of digits after the decimal point (Decimal Point At) = 2

The decimal point is counted as one digit in "Digits".

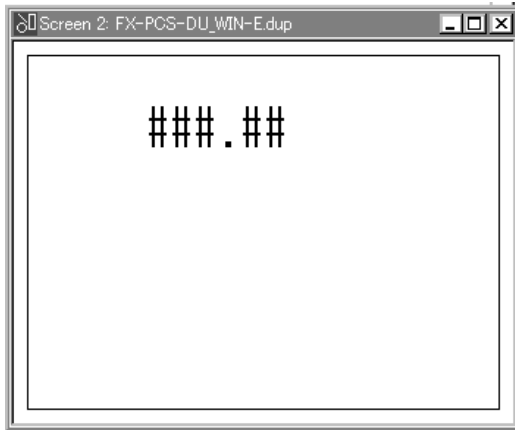


9) Set "Character Size" to "W: x2" and "H: x2".

10) Click [OK] to close the dialog box.



(To next page)



5.6 Let's change over screen

You can change over the screen by pressing a touch key or giving a command from a connected equipment such as PLC.

This paragraph describes the screen changeover setting procedure in the screen creation software.

Screen changeover type

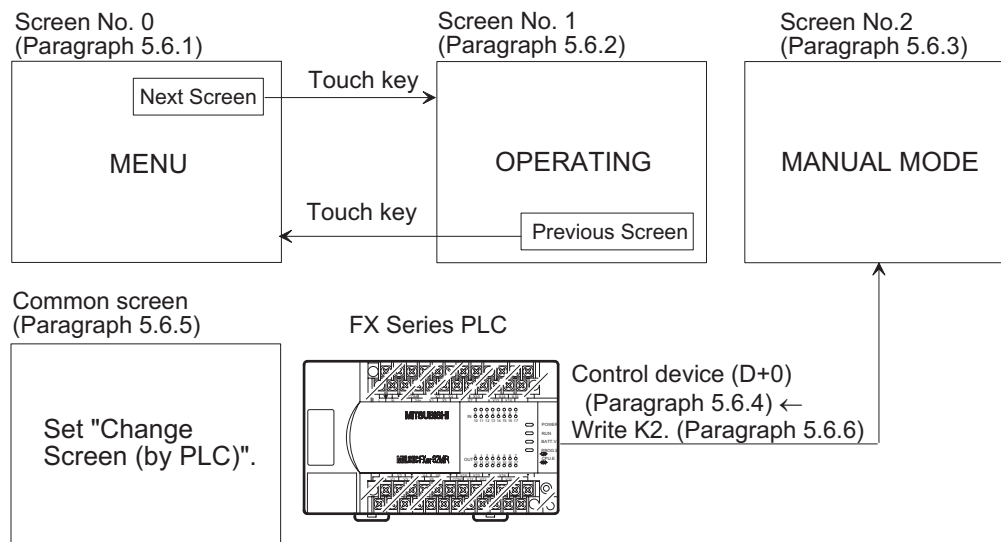
Table:5.3

Type	Set item	Sequence program
1) Touch key	"Touch Key" object	Not required
2) Connected equipment (PLC)	Control device "Change Screen (by PLC)" object	Required
3) Touch key and connected equipment (PLC)	"Touch Key" object Control device "Change Screen (by PLC)" object	Required

Ver2.4~ In the set item, "Change Screen" object (without key specification) is changed to "Change Screen (by PLC)" object.

The setting procedure for the type 3) is described below.

Example of created screen change



The later paragraphs describe the case in which the touch key changes over the screens Nos. 0 and 1, and the FX Series PLC changes over to the screen to No. 2 using a sequence program.

List of created screens and object setting

- | | |
|---|-----------------|
| 1) User screen No. 0 | Paragraph 5.6.1 |
| User screen No. 1 | Paragraph 5.6.2 |
| User screen No. 2 | Paragraph 5.6.3 |
| 2) Control device (head word device) | Paragraph 5.6.4 |
| 3) "Change Screen (by PLC)" object on common screen | Paragraph 5.6.5 |
| 4) Sequence program | Paragraph 5.6.6 |

5.6.1 Screen No. 0 for screen changeover

This paragraph describes the procedure to set the changeover from the screen No. 0 to the screen No. 1 by pressing a touch key and display the text "MENU".

Example of created screen

Start point

Start point (X: 100, Y: 120)

Text Character Size: W: x4, H: x2

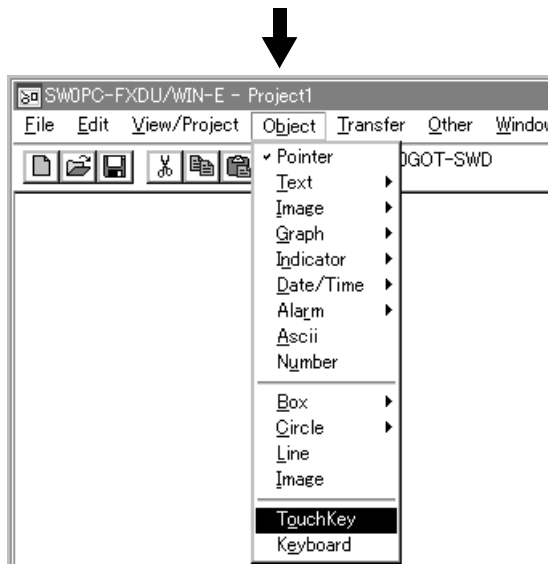
Touch Key Position: X: 240, Y: 0
Size: W: 80, H: 30
Label: Next Screen
Function: Change Screen

Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)

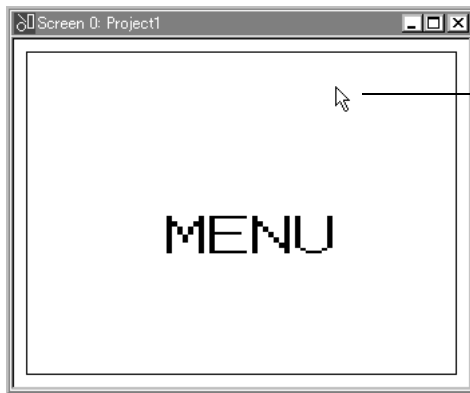
- 1) Left-click "Object" on the tool bar. Point "Text" using the mouse cursor. When the submenu appears on the right side, point and left-click "Text".
- 2) Put the mouse cursor at a desired start point on the screen window, and right-click it. The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window. (After creating a text, you can move it or change its size using the Text dialog box or the mouse.)
- 3) The dialog box appears.
- 4) The cursor is flickering in the text input area.
- 5) Input the text to be displayed. Example: MENU Input "M", "E", "N" and "U".
- 6) Set "Character Size" to "W: x4", "H: x2".
- 7) Click [OK] to close the dialog box.

☞ Paragraph 8.1.1

Setting of text is completed.

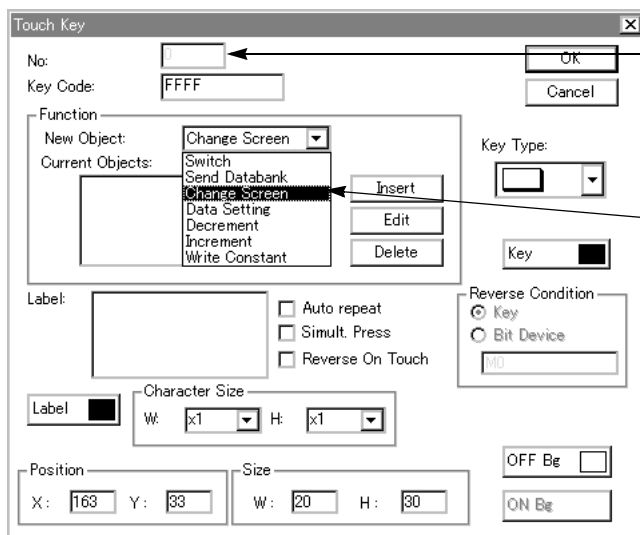


- 1) Left-click "Object" on the tool bar. Point and left-click "Touch Key".



- 2) Put the mouse cursor at a desired start point on the screen window, and left-click it.

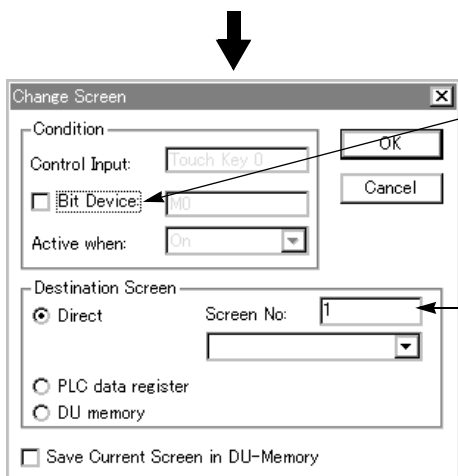
The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window. (After creating a touch key, you can move it or change its size using the Touch Key dialog box or the mouse.)



- 3) The dialog box appears.
- 4) To "No.", a serial No. beginning with "0" is automatically assigned for identification of each touch key. (Though you can change the No., the assigned number is used as it is in this example.)
- 5) In "New Object", select "Change Screen". Click the new object display area if "Change Screen" displayed there. Or click the [▼] button to display the dropdown menu, then select "Change Screen" on the menu.

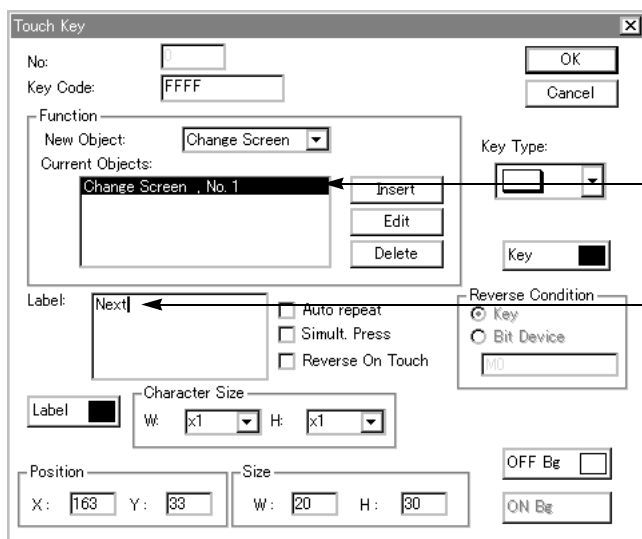
☞ Paragraph 8.1.1

(To next page)



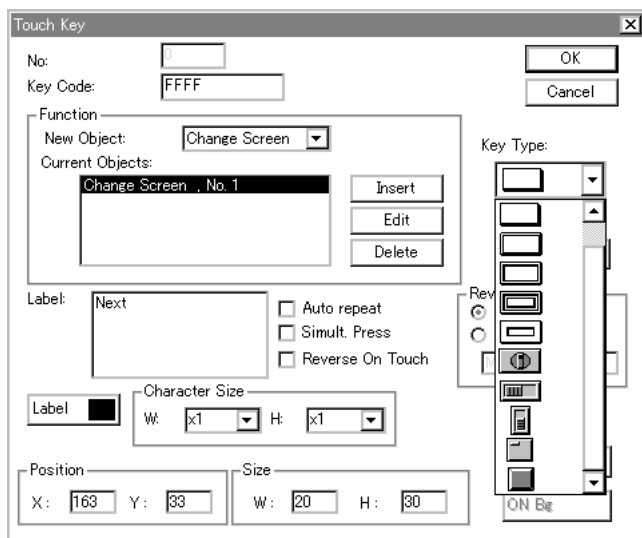
6) Do not set "Condition". Do not check "Bit Device". (If "Bit Device" is clicked and the radio button is ON, when the touch key is pressed, the screen changes over in accordance with the setting of the bit device of the PLC.)

7) Input "1" as the screen No. to be displayed by screen changeover.



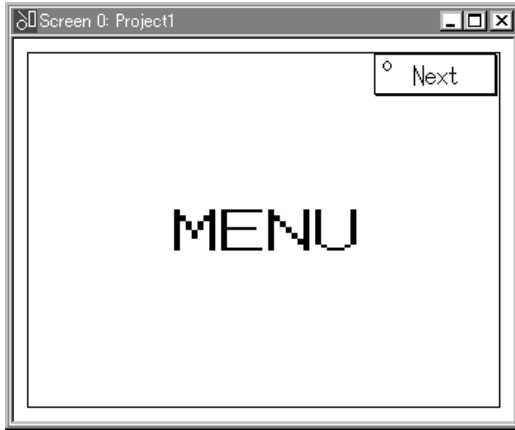
In the displayed current object list, the change screen function is assigned to the touch key.

8) Input the characters to be displayed on the touch key. Example: Next Screen



9) As the key type, select "shaded single frame" (the second symbol from the top). Click the key type display area if the shaded single frame is displayed there. Or click the [▼] button to display the dropdown menu, then select the shaded single frame.

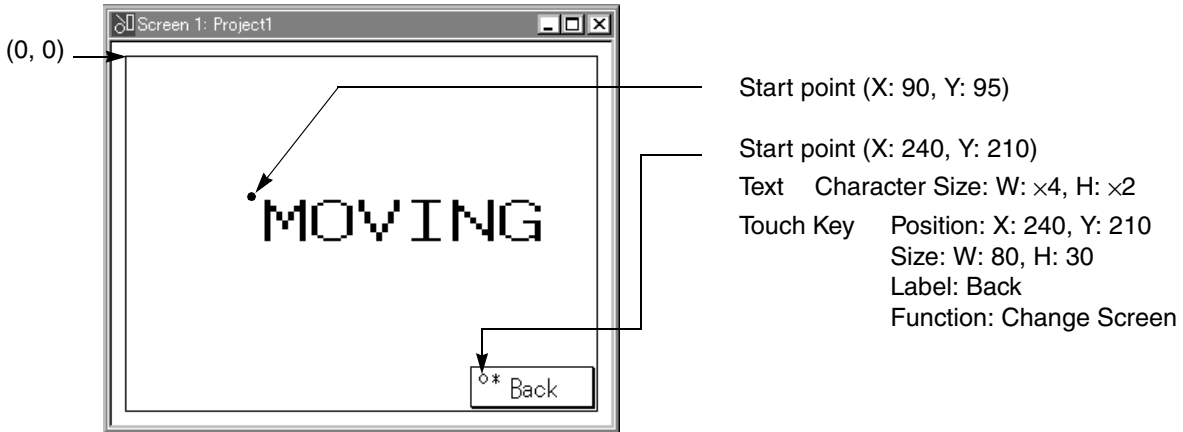
(To next page)



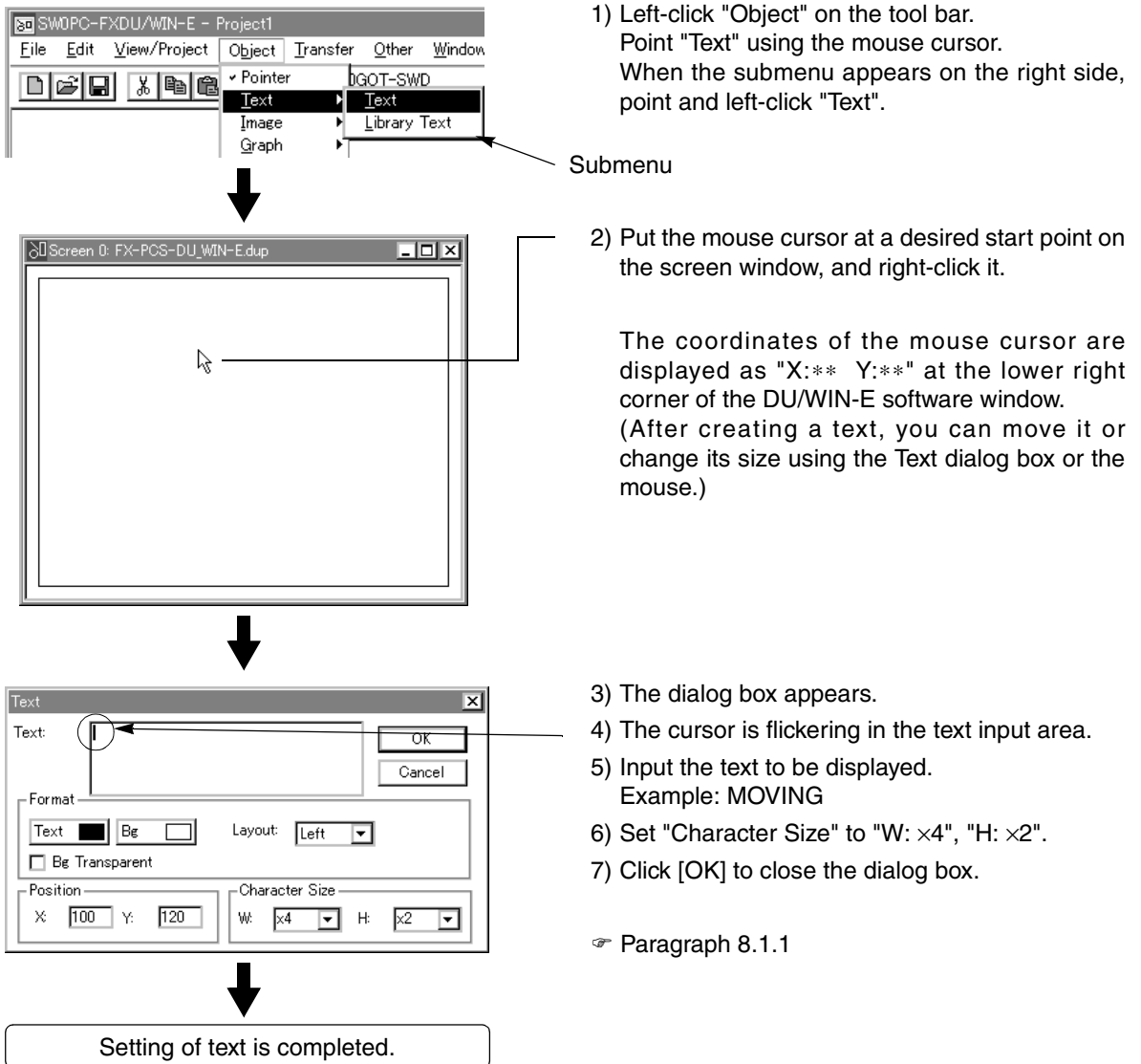
5.6.2 Screen No. 1 for screen changeover

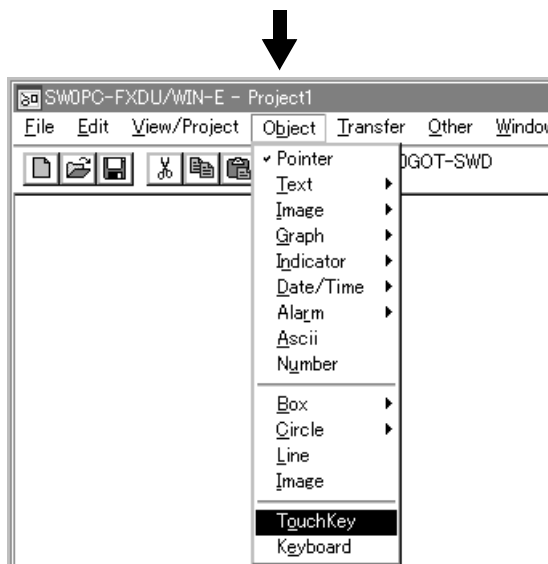
This paragraph describes the procedure to set the changeover from the screen No. 1 to the screen No. 2 by pressing a touch key and display the text "OPERATING".

Example of created screen

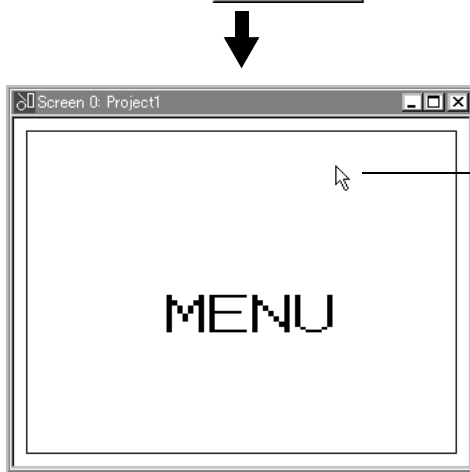


Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)



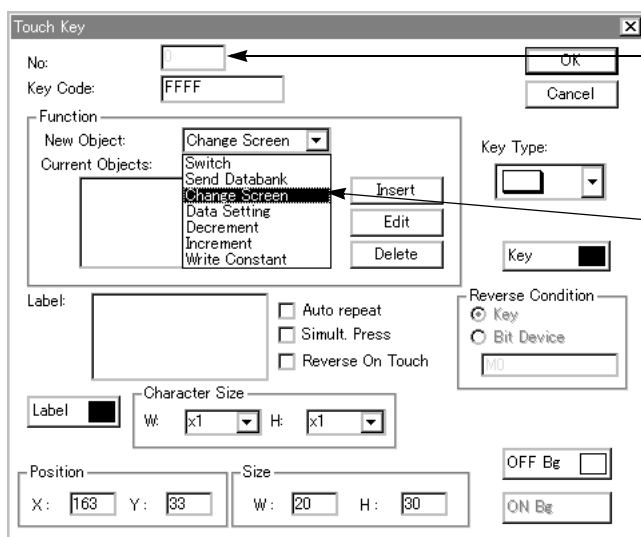


- 1) Left-click "Object" on the tool bar. Point and left-click "Touch Key".



- 2) Put the mouse cursor at a desired start point on the screen window, and left-click it.

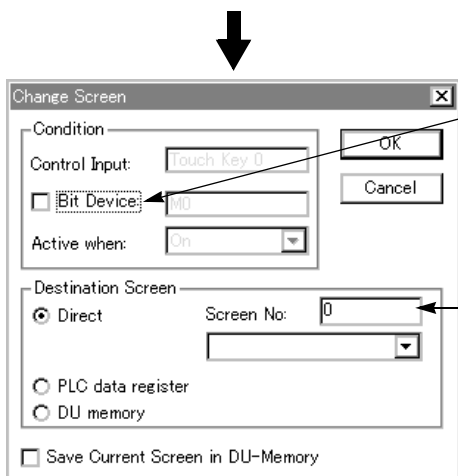
The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window. (After creating a touch key, you can move it or change its size using the Touch Key dialog box or the mouse.)



- 3) The dialog box appears.
- 4) To "No.", a serial No. beginning with "0" is automatically assigned for identification of each touch key. (Though you can change the No., the assigned number is used as it is in this example.)
- 5) In "New Object", select "Change Screen". Click the new object display area if "Change Screen" displayed there. Or click the [▼] button to display the dropdown menu, then select "Change Screen" on the menu.

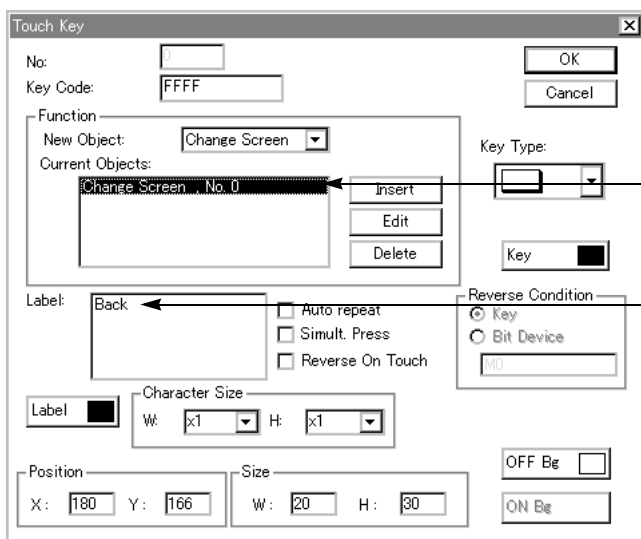
☞ Paragraph 8.1.1

(To next page)



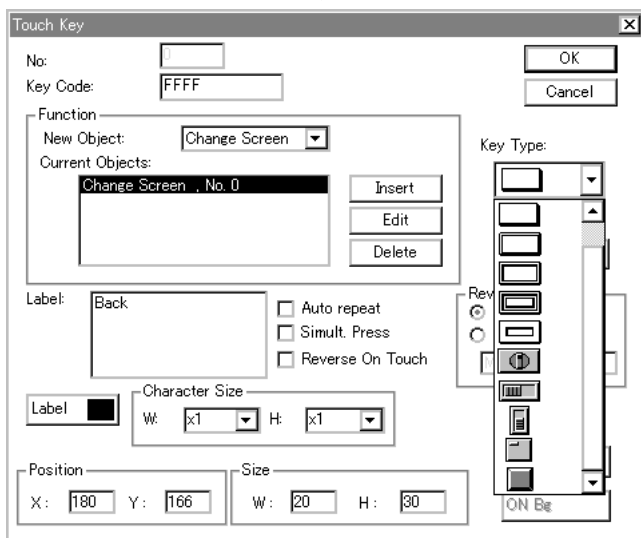
6) Do not set "Condition". Do not check "Bit Device". (If "Bit Device" is clicked and the radio button is ON, when the touch key is pressed, the screen changes over in accordance with the setting of the bit device of the PLC.)

7) Input "0" as the screen No. to be displayed by screen changeover.



In the displayed current object list, the change screen function is assigned to the touch key.

8) Input the characters to be displayed on the touch key. Example: Back



9) As the key type, select "shaded single frame" (the second symbol from the top). Click the key type display area if the shaded single frame is displayed there. Or click the [▼] button to display the dropdown menu, then select the shaded single frame.

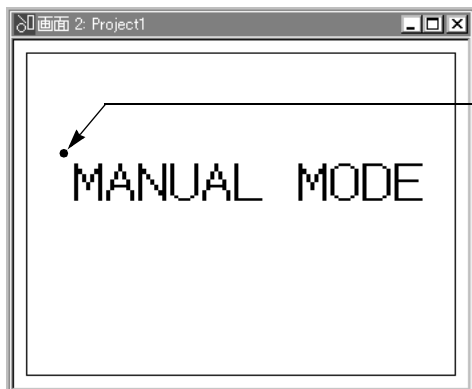
(To next page)



5.6.3 Screen No. 2 for screen changeover

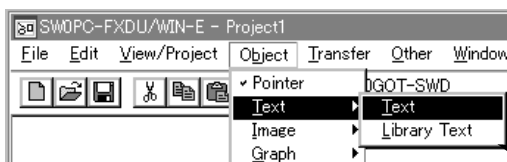
This paragraph describes the procedure to display the text "MANUAL MODE" on the destination (screen No. 2) of screen changeover from the FX Series PLC.

Example of created screen



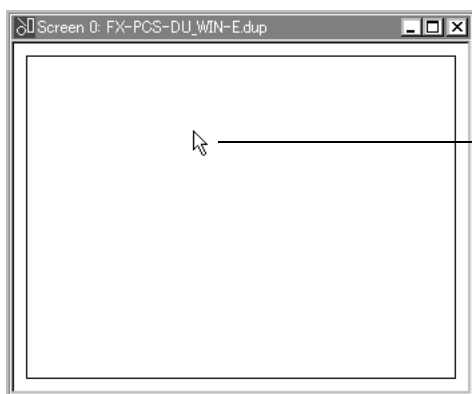
Start point (X: 32, Y: 80)
Text Character Size: W: x3, H: x2

Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)



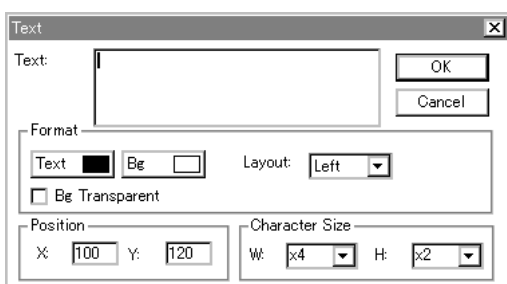
1) Left-click "Object" on the tool bar. Point "Text" using the mouse cursor. When the submenu appears on the right side, point and left-click "Text".

Submenu



2) Put the mouse cursor at a desired start point on the screen window, and right-click it.

The coordinates of the mouse cursor are displayed as "X:** Y:**" at the lower right corner of the DU/WIN-E software window. (After creating a text, you can move it or change its size using the Text dialog box or the mouse.)



3) The dialog box appears.
4) The cursor is flickering in the text input area.
5) Input the text to be displayed. Example: MANUAL MODE
6) Set "Character Size" to "W: x3", "H: x2".
7) Click [OK] to close the dialog box.

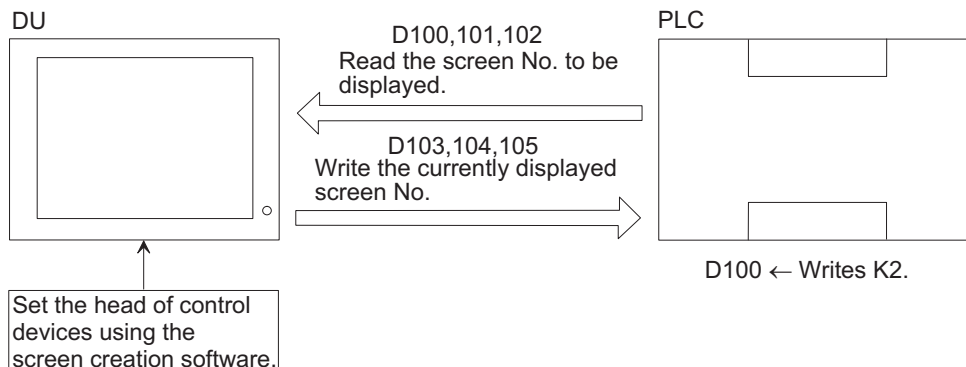
☞ Paragraph 8.1.1

Setting of text is completed.

5.6.4 Setting of control device

This paragraph describes the procedure to occupy several internal contacts (M) and data registers (D) and set the head No. of such devices for communication of diversified information between the DU and the PLC.

Functions of control devices



In this example, the control devices are set to M100 and D100 using the DU/WIN-E.

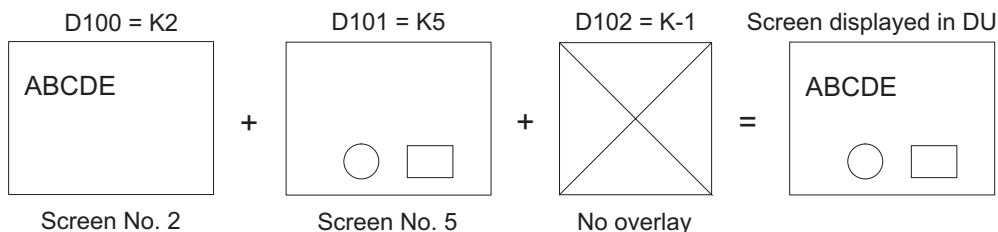
Control devices used for screen changeover

Table:5.5

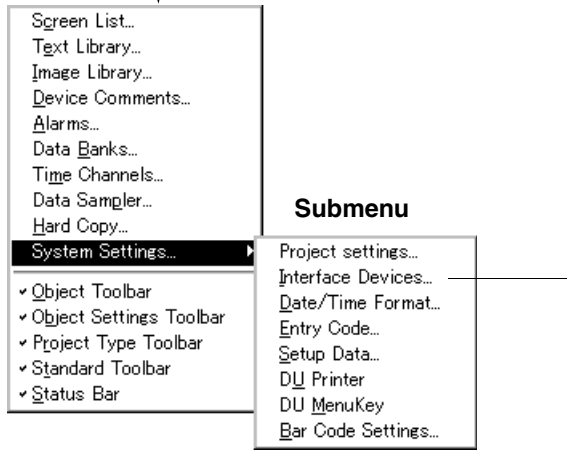
Device No.	Description of control
D100	Specifies screen to be displayed (base screen) using a program in PLC.
D101	Specifies overlay screen 1.
D102	Specifies overlay screen 2.
) In specification using a sequence program, up to 3 screens can overlay.	
D103	Currently displayed screen No. written by DU
D104	Currently overlaying screen 1
D105	Currently overlaying screen 2

Overlay by PLC

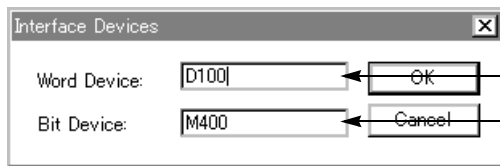
If the overlay screens 1 and 2 are not used, write "-1" to the data register.



Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)



- 1) Left-click "View/Project" on the tool bar. Point "System Settings" using the mouse cursor. When the submenu appears on the right side, point and left-click "Interface Devices".



- 2) The dialog box appears.
- 3) The cursor is flickering in the input area. Input a data register (D). Example: D100
Input "D", "1", "0" and "0".
- 4) Left-click the input area to flicker the cursor. Input an internal relay (M). Example: M100
Input "M", "1", "0" and "0".
- 5) Click [OK] to close the dialog box.

5.6.5 Setting of "Change Screen (by PLC)" object

In order to change over the screen in accordance with the data register (D) specified in "Interface Devices", you should create the "Change Screen (by PLC)" object on the user screen.

The screen to be created varies depending on the case as follows.

- a) When you would like to always change over the screen by a touch key or the PLC
- b) When you would like to always change over the screen by a touch key, but not like to change over the screen by the PLC on the user screen

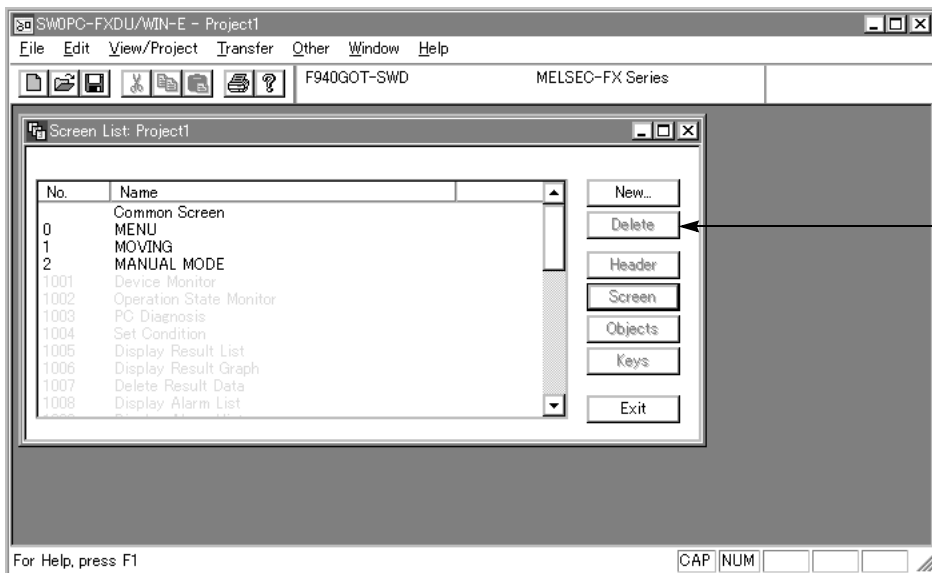
This paragraph describes mainly the setting in the case (a).

The setting procedure for the case (b) is supplemented if the procedure is different.

Example of created screen

The "Change Screen (by PLC)" object is not displayed on the user screen.

Operating procedure (Display the screen window in advance while referring to Paragraph 5.2.)

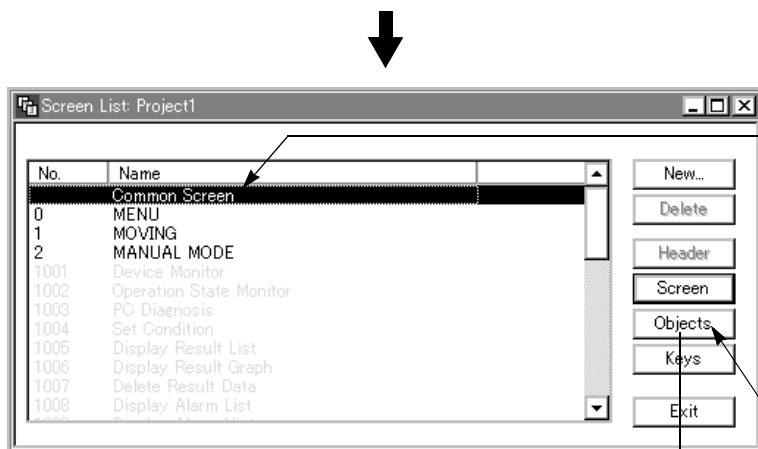


- 1) If the screen list window is not displayed, left-click "View/Project" (tool bar)-"Screen List".

Screen list window



(To next page)



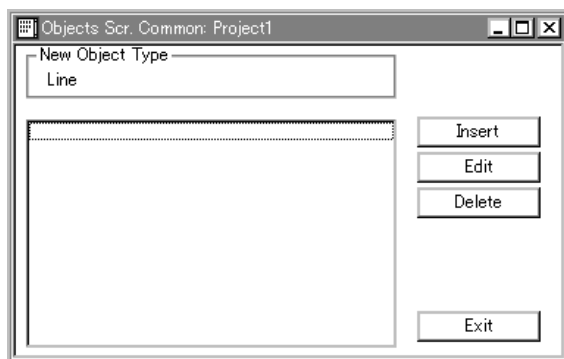
In the case a)
2) In the screen list, select "Common Screen" by clicking it.

In the case b)
2) In the screen list, select a desired screen No. by clicking it.

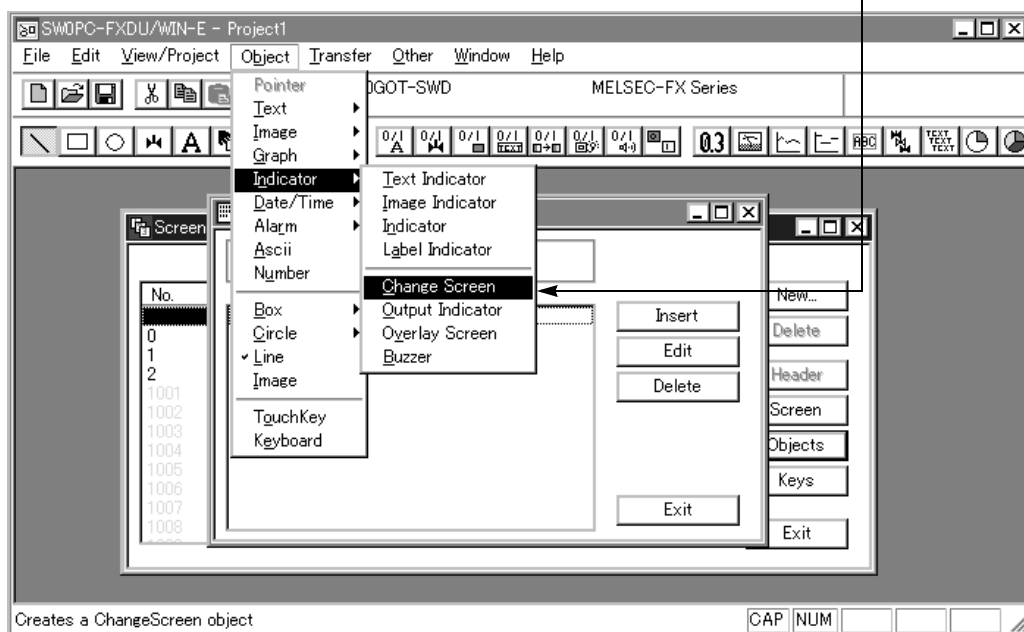
3) Click the [Objects] button.
Or select "Object" (tool bar)-[Indicator]-[Change Screen (by PLC)].

Proceed to 6) in the next page.

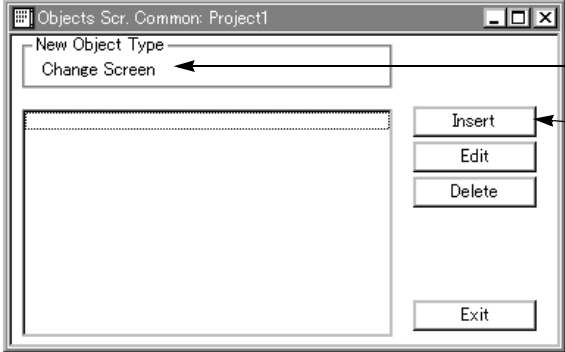
4) The dialog box appears.



5) Left-click "Object" on the tool bar. Point "Indicator", then point and left-click "Change Screen".

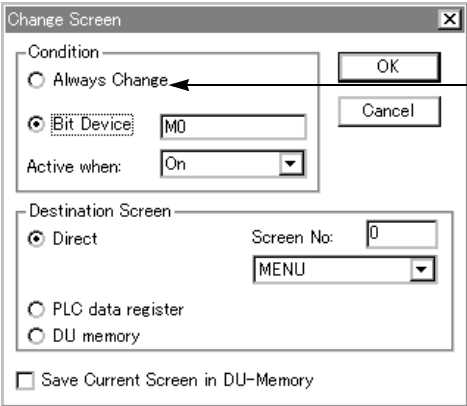


(To next page)



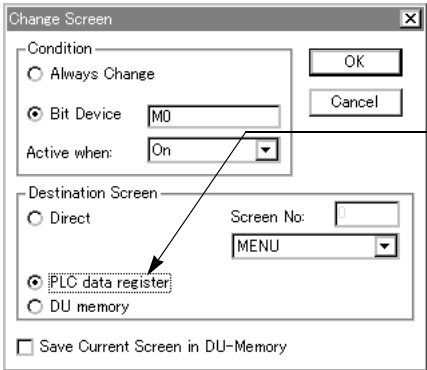
6) In "New Object Type" on the screen list window, "Change Screen (by PLC)" is displayed.

7) Click the [Insert] button.



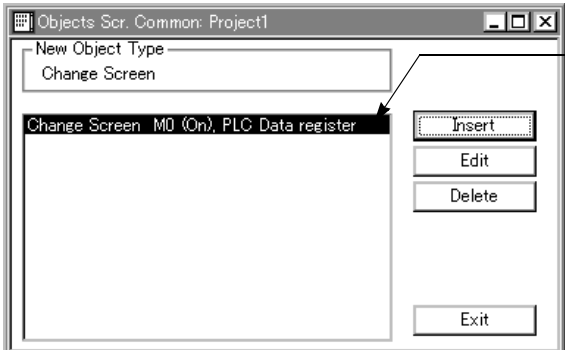
8) The Change Screen (by PLC) dialog box appears.

9) You can set the bit device condition for screen changeover. In this example, click to turn on the radio button of "Always Change".



10) You can select the method to refer to the screen No. for screen changeover. In this example, click to turn on the radio button of "PLC data register" so that the word device of the PLC set in "Interface Devices" in the DU/ WIN-E is referred to.

11) Click [OK] to close the dialog box.



Now, the "Change Screen" object is registered.

5.6.6 Creation of sequence program (reference)

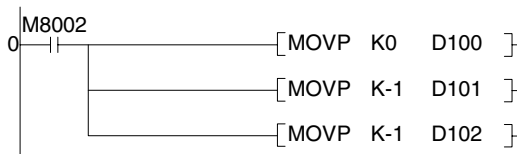
Create the sequence program shown below using a peripheral unit for PLC.

Device assignment table

Table:5.6

Control device	D100	Write screen No. to be displayed in sequence.	Base screen
	D101		Overlay screen 1
	D102		Overlay screen 2
	D103	Screen No. displayed in DU (written by DU)	Base screen
	D104		Overlay screen 1
	D105		Overlay screen 2
D0	Used as data registers to store screen	Base screen	
D5		Overlay screen 1	
D10		Overlay screen 2	
M0 to M2	Used in compare instruction (CMP) to check display screen	Base screen	
M5 to M7		Overlay screen 1	
M10 to M12		Overlay screen 2	

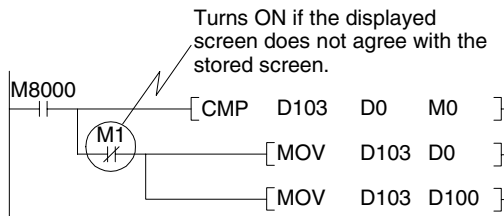
Sequence program



[Initial program]

Displays the screen No. 0 as the base screen.
Writes "-1" because overlay screens are not used.

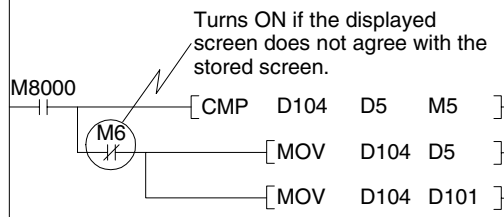
This part is not required if overlay screens are not used.



[Check of screen changeover by touch key]

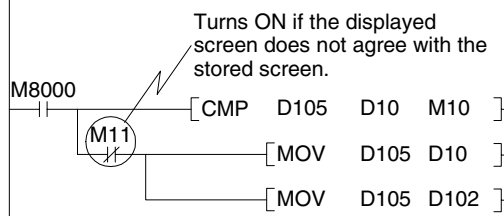
Program for base screen

- Compares the displayed screen with the stored screen.
- Stores the displayed screen in D0.
- Transfers the displayed screen to D100 which specifies the screen to be displayed in the DU.



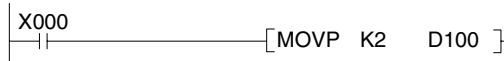
Program for overlay screen 1

- Compares the displayed screen with the stored screen.
- Stores the displayed screen in D5.
- Transfers the displayed screen to D101 which specifies the screen to be displayed in the DU.



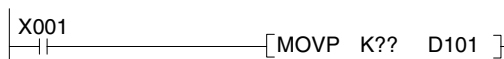
Program for overlay screen 2

- Compares the displayed screen with the stored screen.
- Stores the displayed screen in D10.
- Transfers the displayed screen to D102 which specifies the screen to be displayed in the DU.



[Screen changeover area in sequence program]

Displays the screen No. 2 when X0 of the PLC is input.



Sets the screen No. to overlay to "??".

MEMO

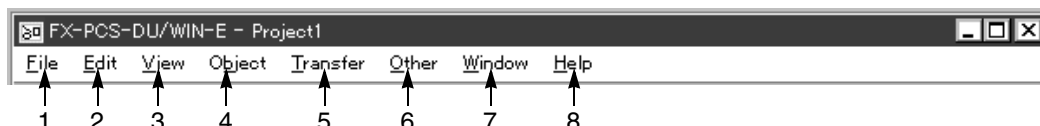
1	Introduction
2	Installation
3	Starting up and Terminating the Program
4	What You Should Know Before Starting Drawing
5	Preparation for Drawing and Basic Operations
6	Menu Bar Functions
7	Common Drawing Operations
8	Object Function Description
9	Related Information

6. Menu Bar Functions

The menu bar offers the menu to select the commands for managing the screen data of the DU, drawing, etc.

6.1 Types and functions of the menu bar

The menu bar offers the menu for file operation, edition (cut and paste), window display, objects, etc.



Major functions

1. [File]

- 1)Crates the screen newly.
- 2)Reads the screen data file (Reads the data created by the DOS version drawing software.).
- 3)Saves the screen data to the floppy disk, etc.
- 4)Prints out the screen created into document.

2. [Edit]

- 1)Cuts the selected object.
- 2)Copies the selected object to the clip board.
- 3)Pastes the object copied in the clip board.
- 4)Searches the selected objects, and displays the list of screen Nos. using the searched object.

3. [View]

- 1)Displays the screen list window.
- 2)Performs the basic setting of the text library, and creates the data.
- 3)Performs the basic setting of the image library, and creates the data.
- 4)Performs the basic setting of the device comment, and creates the data.
- 5)Performs the basic setting of the alarm, and creates the data.
- 6)Performs the basic setting of the data file, and creates the data.
- 7)Performs the basic setting of the time channel, and creates the data.
- 8)Performs the basic setting of sampling.
- 9)Creates the external character data.
- 10)Sets the operation environment for the DU and the F940GOT as the system setting.
Available setting items vary depending on the DU model.

The available items vary depending on the DU model.

Table:6.1

Project Settings	Sets the DU type, the equipment connected, and the DU system language. Functions in the same way as the window displayed by selecting "File" and "New".
Interface Device	Sets the head No. of the devices (D, M) which transfer the information between the DU and the PC.
Date/Time Format	Sets the USA type (M/D/Y) or the European type (D/M/Y).
Entry Code	Sets the password to display the screen for which the screen protection function is set.
Setup Data	Sets the system language, the backlight extinguishing time, etc. which are performed by the system setting in the FX-50DU-TK(S)-E and the F940GOT.
DU Printer	Sets communication of the printer connected to the DU.
DU Menu Key	Sets the position of the switch to change over to the system menu in the FX-50DU-TK(S)-E and the F940GOT.
Bar Code Settings	Sets communication of the bar cord reader connected to the F940GOT.

Table:6.1

Status	Sets the bit device and the word device written in the PLC when the specified bit device condition is established.(☞ Ver2.5~)
Color Settings	Selects 16 colors to be used among 256 colors (only in the F940WGOT). (☞ Ver2.5~)

11)Turns on/off the display of each tool bar, and modifies the basic screen configuration.

4. [Object]

Select an object type to be registered such as "Text", "Image", "Graph", "Indicator", "Change Screen", etc.

5. [Transfer]

- 1)Writes the screen data created or amended by the DU/WIN to the DU and the F940GOT or reads the data from the DU and the F940GOT. (The screen data of the FX-10DU-E exclusively is transferred to the FX Series PC.)
- 2)Reads the sampling data, the alarm history and the frequency acquired by the DU and the F940GOT.
- 3)Selects the channel (COM) of the RS-232C communication port of the personal computer communicating with the DU and the F940GOT.

6. [Other]

- 1)Checks whether the setting of the screen data being read is correct.
- 2)Displays the list of the memory use status for the screen data being read.
- 3)Displays the sampling data acquired by the DU and the F940GOT. (The data is required to be read preliminarily using the transfer command.)
- 4)Displays the alarm history acquired by the DU and the F940GOT. (The history is required to be read preliminarily using the transfer command.)
- 5)Alarm frequency acquired by the DU and the F940GOT

7. [Window]

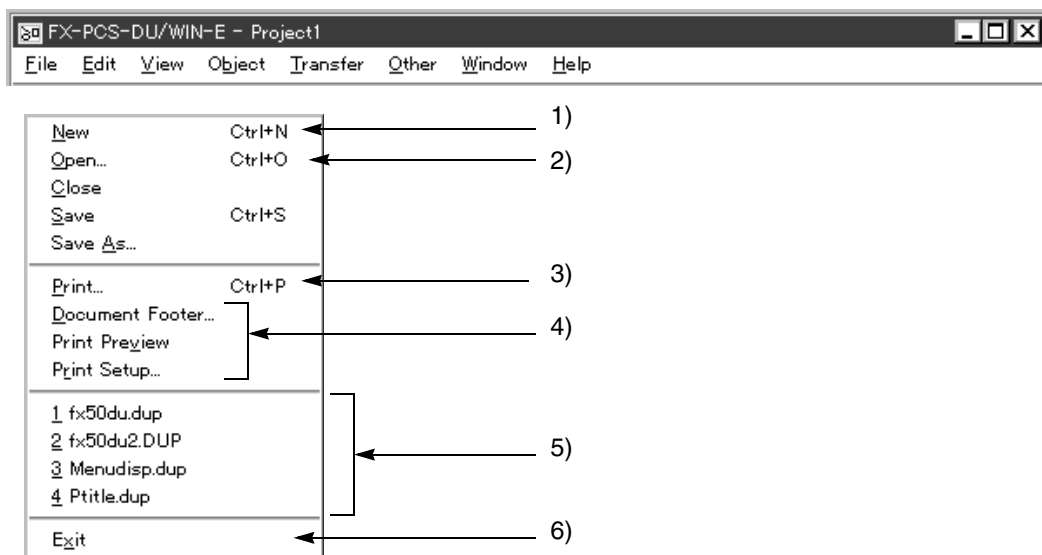
- 1)Opens a window equivalent to the active window.
- 2)Cascades two or more windows so that they are easy to look at.
- 3)Tiles two or more windows in the vertical direction so that they are easy to look at.
- 4)Arranges neatly the icons which are minimized windows.
- 5)Sets the grid display ON/OFF status, suction of the grid, the grid space, etc. on the drawing window.
- 6)Enlarges or reduces the drawing window displayed.
- 7)Sets the ON/OFF status of the touch key No. display, cascading of the common screens and cascading of many screens.
- 8)Selects the window to be active from the screen list currently open or the drawing window list.

8. [Help]

- 1)Searches and displays the functions, the operating procedures, etc. based on the topics or the term.
- 2)Displays the version of the DU/WIN software.

6.2 Jobs offered by the “File” command

The screen data can be saved to or read from a file, and printed out to the printer. The DU/WIN software can be terminated.

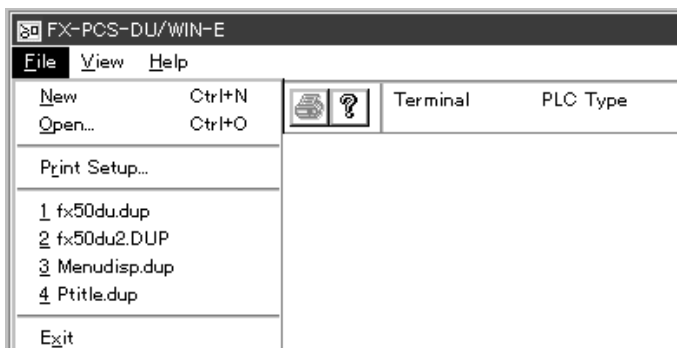


1)	Starts drawing. Reads the screen data.	File operation
2)	Saves the screen data.	
3)	Starts printout.	Printout
4)	Sets the printer. Sets the paper.	
5)	Displays up to 4 screen data file names read or written recently.	
6)	Terminates the software.	



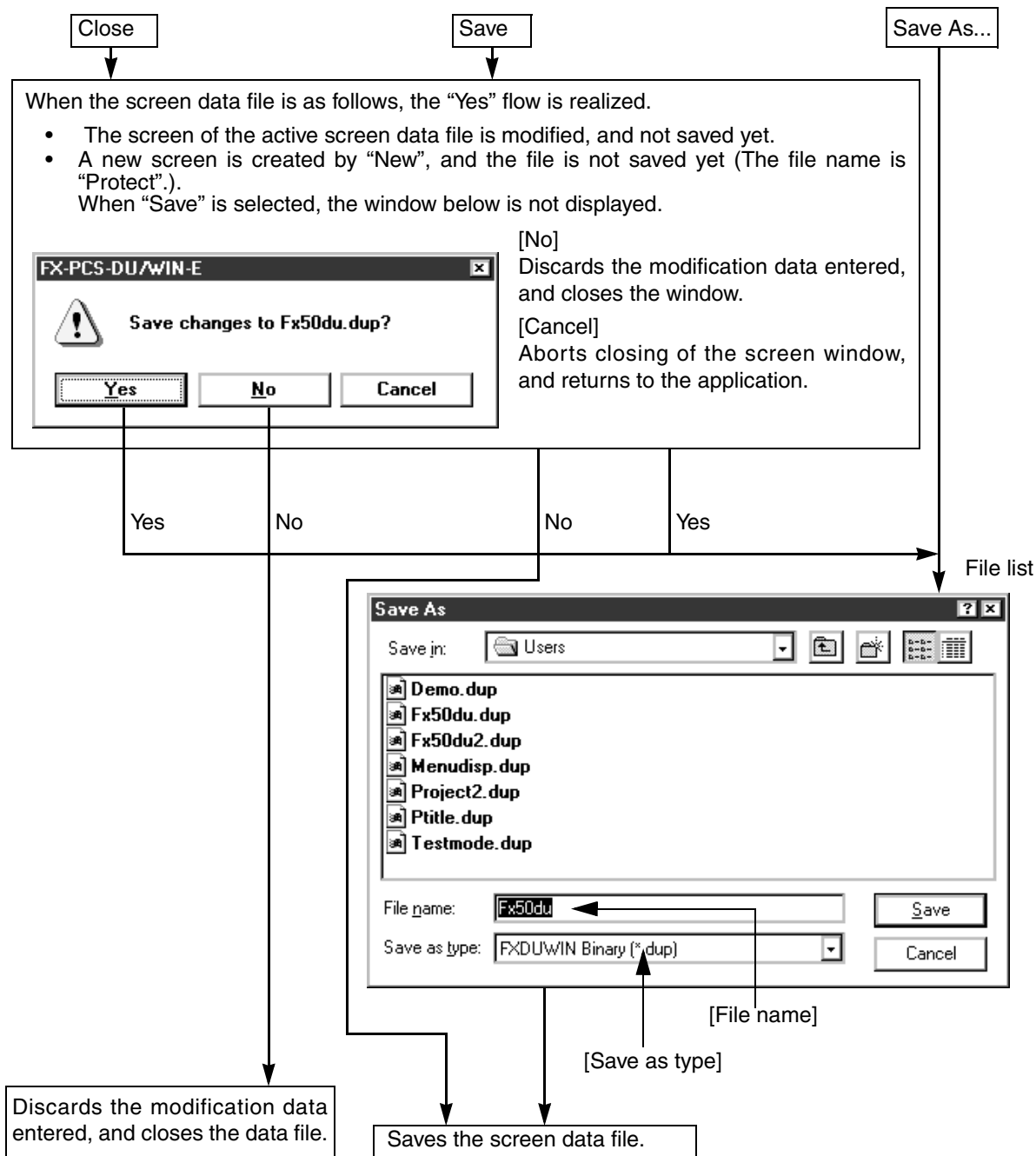
File menu on the basic screen

On the basic screen displayed when the DU/WIN software is started up, the following commands exclusively are displayed on the file menu.



6.2.1 Saving the screen data to the disk

The “Close”, “Save” and “Save As” commands offer the function to save the screen data to a file or discard it, then close the screen window.



Description on the commands

[Close]	Discards the active screen data file, and closes the drawing window. Displays the confirmation window when the file is not saved yet after it has been modified.
[Save]	Overwrites the current file when the file is not saved yet after it has been modified. When the file name is “Project” (initial name), the “Save As...” window is displayed to confirm the file name.
[Save As...]	Saves the screen data file with a name different from the current file name. When a file name displayed in the file list is specified, it is overwritten. Before overwrite, the confirmation window is displayed.

6.2.2 File formats which can be read and saved

When the DU screen data read by the DU/WIN software is saved to a file, the following diversified formats are available.

File formats which can be saved

Table:6.2

File format (extender)	Data type
DUP	File saved by the DU/WIN (this software)
DUA	File saved in the text format by the DU/WIN (this software)
ITH	File saved in the Intel hexadecimal format (ROM writer)
GDT	File created by the DOS version drawing software

- File format: DUP
This format represents the DU screen data file created by the DU/WIN software. The file is saved as the binary code.
- File format: DUA
This format represents the DU screen data file created by the DU/WIN software. The file is saved as the text document.
For this file, the setting of the DU screen data can be displayed or modified using the software called editor which edits the text.
However, if the data is modified incorrectly, the screen cannot be displayed correctly. It is recommended not to modify the setting. Make sure to make the backup of the screen data if modifying it.
- File format: ITH
This format represents the data file used to transfer the data between the ROM writer and the personal computer. The file is saved as the Intel hexadecimal code.
- File format: GDT
This format represents the DU screen data file created by the DOS version drawing software (FX-PCS-DU/AT-EE, etc.).
The DU/WIN software can read the data file by selecting "File" and "Open".
The GOT-F900 screen data can be saved.
Compared with the DUP format and other formats, the file capacity can be reduced.

Ver2.5 - ▶



What is the extender

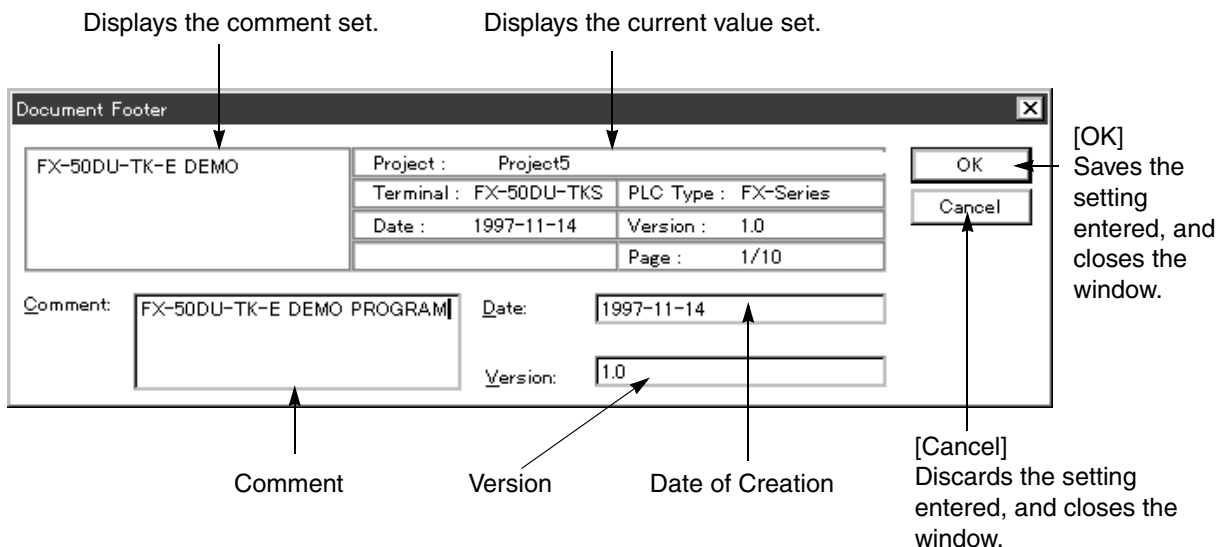
The file name consists of the major file name (up to 8 half-width characters), period (.) and the extender (3 half-width characters).

The extender represents the file type (Example: EXE, COM = program file).

Because the general Windows software adds the unique extender, the software which has created the file can be seen from the extender. In the Windows95, a long file name (up to 250 characters) is available.

6.2.3 Creating the printout title

The “Document Footer” command allows to set the comment, the date and the version among the file name (Project), the DU type, the programmable controller, the date, the version and the comment printed at the bottom of a paper sheet.



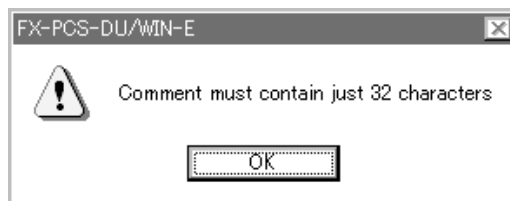
“Project” indicates the screen data file name. The DU type and the programmable controller indicates the contents set in the “Project” dialog box.

Description on the input areas

- [Comment] Up to 32 half-width characters can be entered as the comment of the screen data.
- [Date of Creation] Up to 16 half-width characters can be entered as the date when the screen data was created. The date of the personal computer is set as the default.
- [Version] Up to 16 half-width characters can be entered as the version No. for managing the screen data. “1.0” is set as the default



- If the number of characters entered to “Comment”, “Date of Creation” or “Version” exceeds the specified limit, the error message dialog box is displayed when the [OK] button is clicked and the characters entered are not accepted.

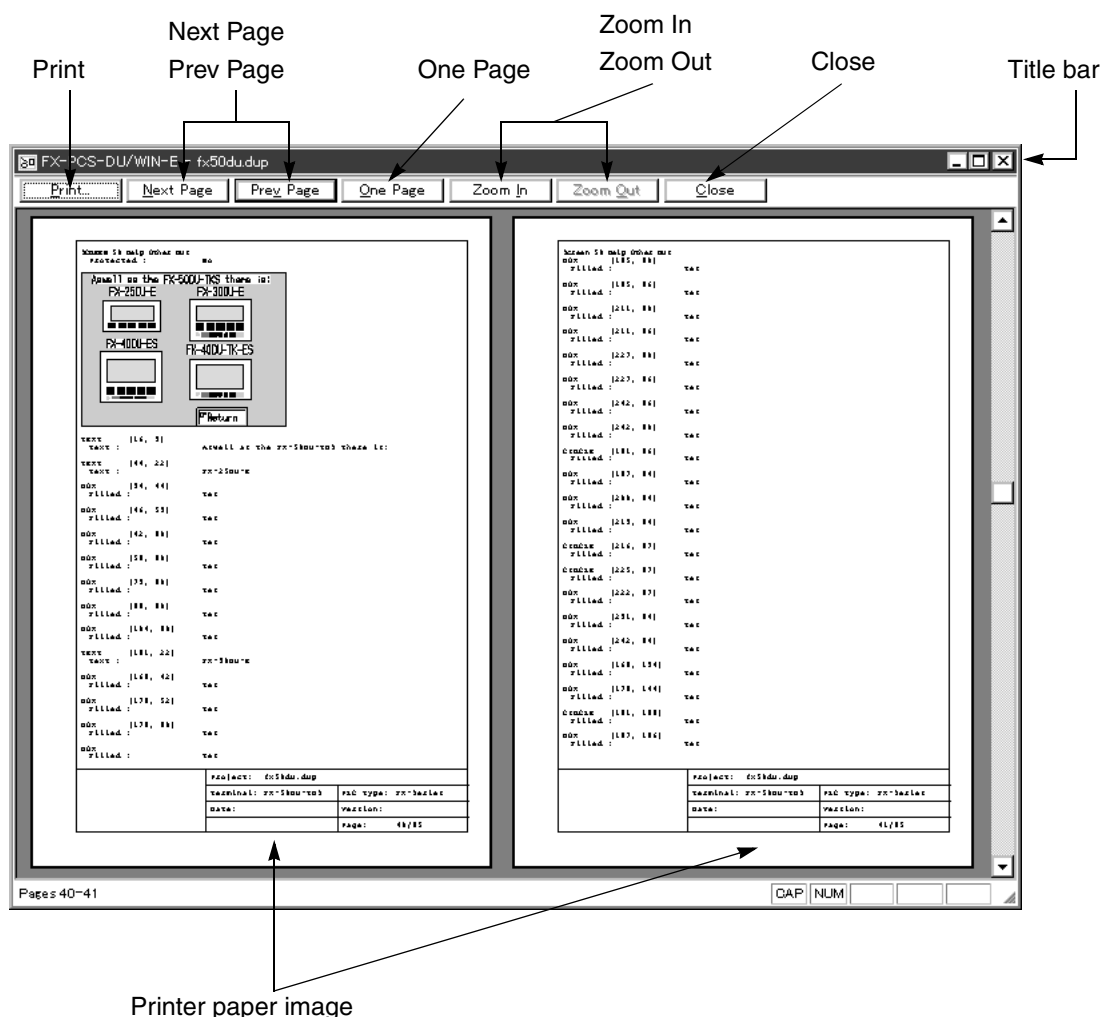


Samples of printout

	Project: Project1	
	Terminal: FX-50DU-TKS	PLC Type: FX-Series
	Date: 1997-11-20	Version: 1.0
	Page: 1/3	


6.2.4 Checking the preview before printout

The "Print Preview" command allows to check on the CRT (screen of the personal computer) the contents to be printed out to the paper.



Description on the commands

[Print]

Opens the setting dialog box to print out the screen data. Functions as if "File" and "Print" are selected or the  button is clicked.

[Next Page/Prev Page]

Changes over to the next or previous page when two or more pages are provided.

[One Page/Two Pages]

Changes over the display mode between "two pages at a time" and "one page". When the paper image size is minimum, the two-page mode is automatically selected.

[Zoom In/Zoom Out]

When the paper image is minimum, "Zoom Out" is displayed in gray and cannot be selected. When the paper image size is maximum, "Zoom In" is displayed in gray and cannot be selected.

[Close]

Closes the printout preview screen, and displays the screen list window.

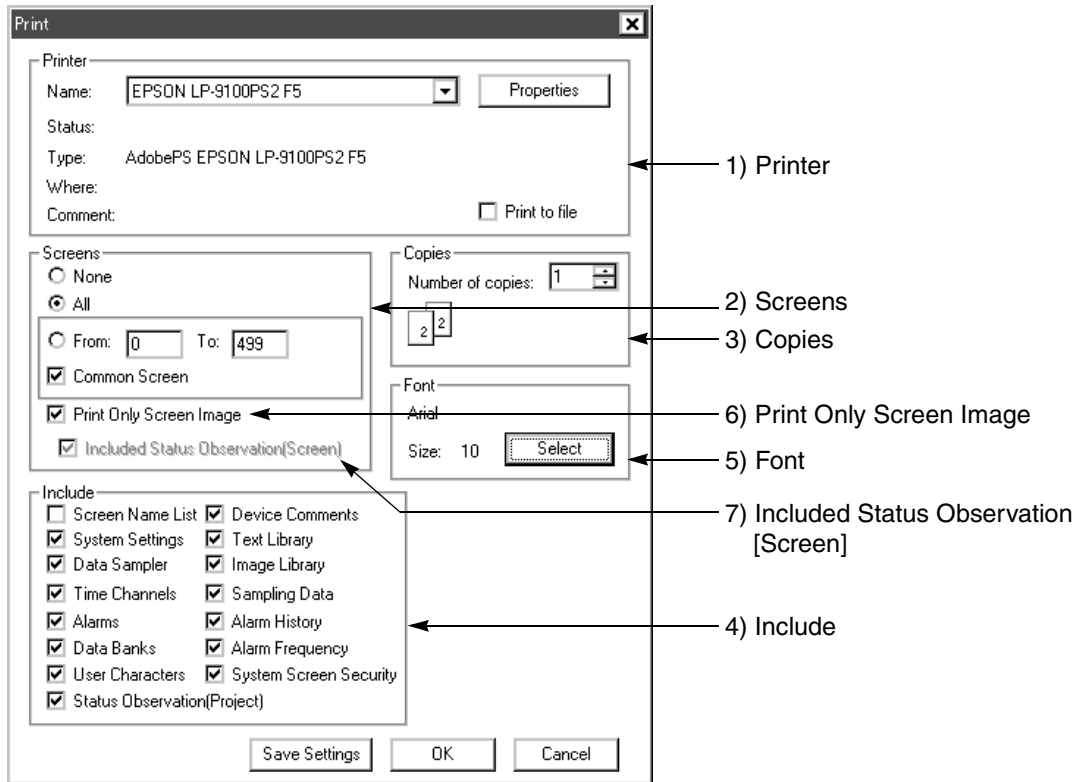
The screen list window is replaced.

When the "Print Preview" command is executed, the screen list window is replaced. This is why the title bar name of the printout preview window is set to "Screen list: file name".



6.2.5 Setting and starting printout

The “Print” command allows to specify the contents related to printout such as selection and setting of the printer, specifications of the printout items, etc., and to start printout.



[Save Settings] Saves the modification entered. The setting saved here is available for next printout.

[OK] Starts printout, and closes the printout dialog box.

[Cancel] Cancels the modification entered, and closes the printout dialog box.

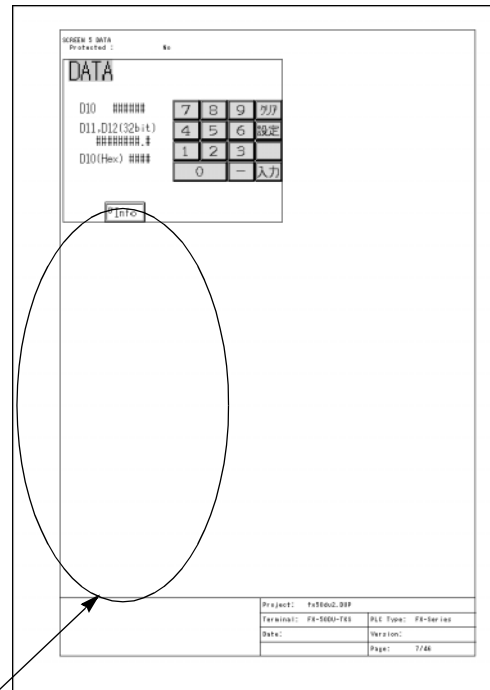
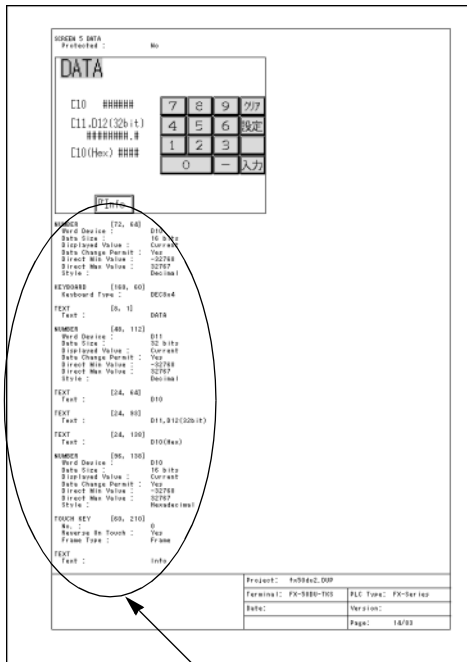
Description on the option boxes

- 1) Printer
The model and the information of the printer specified by the Windows are displayed. The printer model displayed is the one set by “File” and “Printer Frequently Used” on the “My Computer”-“Printer” window. When two or more printers are registered, the printer name can be selected in the list displayed when the drop-down box is clicked. The Property button allows to set the detailed settings such as the printer paper size, enlargement/reduction, etc.
☞ For the details, refer to the manual of the printer used.
- 2) Screens
Click the item on the user screen to be printed out to add the “●” mark. The start value is set to “0” as the default. The end value is set to “maximum number of screens - 1” as the default.
- 3) Copies
Enter the number of copies to be printed out.
- 4) Include
The function item names built in each DU not displayed on the user screen are indicated in the list. Click the item to be printed out to add the “✓” mark.
"Screen Name List" is added in the DU/WIN software V2.0 and later.
"Status Observation" is added in the DU/WIN software Ver. 2.5 and later.
"System Screen Security" is added in the DU/WIN software Ver. 2.6 and later.
- 5) Font
Specify the font used to print out the paper and display the printout image displayed on the screen by “Print Preview”.
When the contents to be printed out cannot be accommodated in the paper size, modify the size for adjustment. When the font is modified, it is recommended to check it using “Print Preview”.

- 6) Print Only Screen Image (V2.00 or later)
Both the screen image and the list of set objects are usually printed out. However, when this item is set to ON (A check mark is displayed in the ON status.), the screen image only is printed out.
- 7) Included Status Observation [Screen] (V2.50 or later)
When status observation is set in printing of the screen data, the setting is printed.

Both screen image and object setting list

Screen image only



The object list is not printed out.

6.2.6 Samples of printout

Some examples of printout are shown below (reduced).

System Settings

```

SYSTEM SETTINGS
PROGRAM DEVELOP
Word Delete 000
No Delete 001

DATE FORMAT
Format Type 00:00:00

SETUP DATA
Dzset Yes
Dzset/No 0000
Reset/Chk T 00
Connection Pst 000000
Connection Type 0000
Status No

ENTRY CONF
Display No

DIAL KEY
Key Function 0000

DIAL PRINTER
Speed 000
Data Bkt 000000
Stat Bkt 000000
Punch 000000
Hardware 000000
    
```

```

Project 00000000
Terminal FX300L-TRG PLC Type FX Series
Date Version
Page 44
    
```

Time Channels

Ch	Device	Min	Sec	Wk	Day	Fr	Sat	Sun	Time
0	0100	Yes	Yes	Yes	Yes	Yes	No	No	00:00:00 20:00:00
1	0101	No	No	No	No	No	No	No	00:00:00 20:00:00
2	0102	No	No	No	No	No	No	No	00:00:00 20:00:00
3	0103	Yes	No	Yes	No	Yes	No	No	00:00:00 20:00:00
4	0104	No	No	No	No	No	No	No	00:00:00 20:00:00
5	0105	No	No	No	No	No	No	No	00:00:00 20:00:00
6	0106	No	No	No	No	No	No	No	00:00:00 20:00:00
7	0107	No	No	No	No	No	No	No	00:00:00 20:00:00

```

Project 00000000
Terminal FX300L-TRG PLC Type FX Series
Date Version
Page 44
    
```

Device Comment

```

DEVICE COMMENTS
Device Device Comment
M00 00000000
M01 00000000
M02 00000000
M03 00000000
M04 00000000
M05 00000000
M06 00000000
M07 00000000
M08 00000000
M09 00000000
M10 00000000
M11 00000000
M12 00000000
M13 00000000
M14 00000000
M15 00000000
M16 00000000
M17 00000000
M18 00000000
M19 00000000
M20 00000000
M21 00000000
M22 00000000
M23 00000000
M24 00000000
M25 00000000
M26 00000000
M27 00000000
M28 00000000
M29 00000000
M30 00000000
M31 00000000
M32 00000000
M33 00000000
M34 00000000
M35 00000000
M36 00000000
M37 00000000
M38 00000000
M39 00000000
M40 00000000
M41 00000000
M42 00000000
M43 00000000
M44 00000000
M45 00000000
M46 00000000
M47 00000000
M48 00000000
M49 00000000
M50 00000000
M51 00000000
M52 00000000
M53 00000000
M54 00000000
M55 00000000
M56 00000000
M57 00000000
M58 00000000
M59 00000000
M60 00000000
M61 00000000
M62 00000000
M63 00000000
M64 00000000
M65 00000000
M66 00000000
M67 00000000
M68 00000000
M69 00000000
M70 00000000
M71 00000000
M72 00000000
M73 00000000
M74 00000000
M75 00000000
M76 00000000
M77 00000000
M78 00000000
M79 00000000
M80 00000000
M81 00000000
M82 00000000
M83 00000000
M84 00000000
M85 00000000
M86 00000000
M87 00000000
M88 00000000
M89 00000000
M90 00000000
M91 00000000
M92 00000000
M93 00000000
M94 00000000
M95 00000000
M96 00000000
M97 00000000
M98 00000000
M99 00000000
    
```

```

Project 00000000
Terminal FX300L-TRG PLC Type FX Series
Date Version
Page 44
    
```

User Screen

```

SCREEN DATA
Priority No

DATA

[0] 00000000 [7] 8 [9] CLR
[1] 00000000 [4] 5 [6] CLR
[2] 00000000 [1] 2 [3] CLR
[3] 00000000 [0] * ENT

[4] 00000000

NUMBER [7] 84
Word Device 710
Data Change Permit Yes
Data Set 15 bit
Display Value 000000
Direct Max Value 000000
Direct Max Value 000000
Direct Max Value 000000
Direct Max Value 000000
State Jumper

PROGRAM [7] 84
Program Type 000000

TEXT [7] 84
Text DATA

NUMBER [4] 1121
Word Device 011
Data Change Permit Yes
Data Set 15 bit
Display Value 000000
Direct Max Value 000000
Direct Max Value 000000
Direct Max Value 000000
State Jumper

TEXT [7] 84
Text 000

TEXT [4] 11
Text 011 00000000

TEXT [4] 11
Text 00000000
    
```

```

Project 00000000
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```

6.3 Jobs offered by the “Edit” command

One or more objects registered on the user screen can be selected and used for an other screen. The objects to be modified can be searched on the user screen.



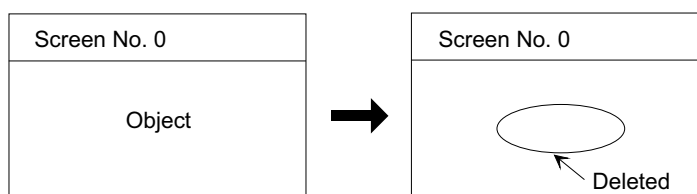
1)	Cuts the selected object, and copies it to the clip board.	Use the selected object for another screen by cut and paste.
2)	Copies the selected object to the clip board.	
3)	Pastes the data on the clip board to the screen.	
4)	Searches the objects set on the user screen.	

6.3.1 Deleting, transferring and copying objects (Screen window)

Each object can be deleted or moved on the screen being edited or copied or transferred to another screen. These functions are equivalent to those of general Windows applications.

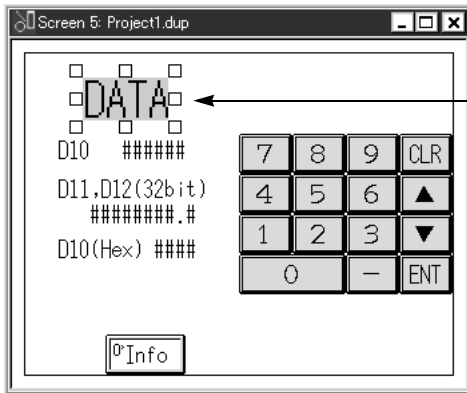
Deletion

This paragraph describes the operating procedure to delete an object on the screen being edited.



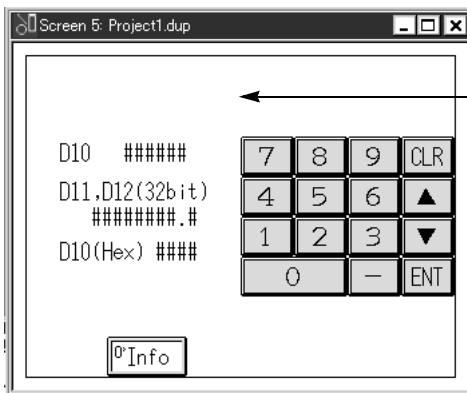
- [Point] To put the mouse cursor on an object.
- [Click] To press the left button of the mouse once.
- [Drag] To point an object and move it while pressing and holding the left or right button of the mouse.

Deletion (cut) procedure



Cut

Click to select an object to be deleted (text "DATA" in this example). When an object is selected, square marks are displayed at its four corners.



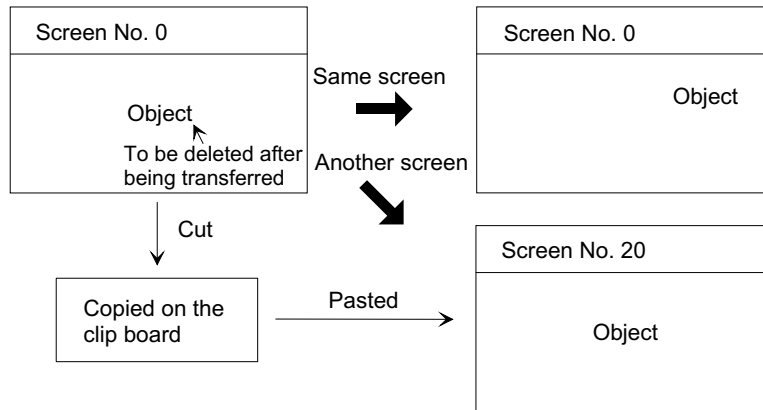
The following two methods are available to execute deletion. Perform either one.

1. Select "Edit" and "Cut" on the tool bar.
2. Press the [Delete] key.

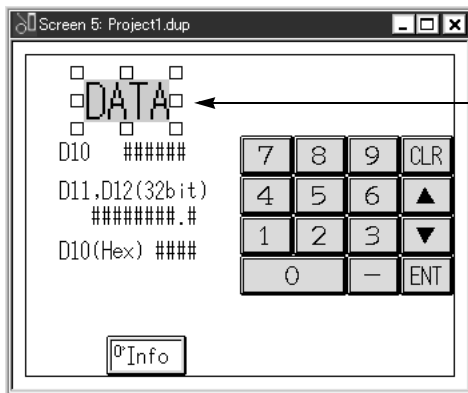
Display after deletion is executed

Transfer

This paragraph describes respectively the operating procedures to select an object on the screen being edited (transfer source), move it on the same screen, or transfer it to another screen in the same file or a screen in a different file (project).



Transfer (cut and paste) procedure



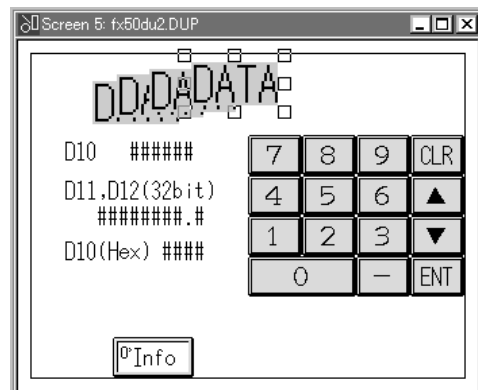
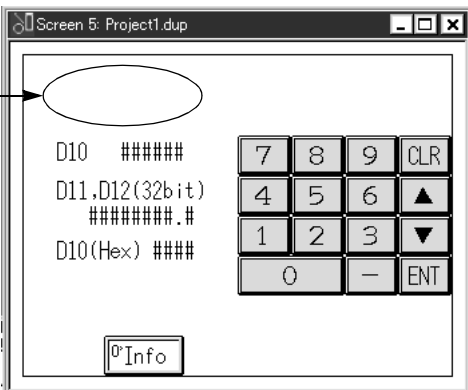
Cut

Click to select an object to be transferred (text "DATA" in this example). When an object is selected, square marks are displayed at its four corners.

Transfer to another screen or screen data

Movement on the same screen

Display after deletion is executed

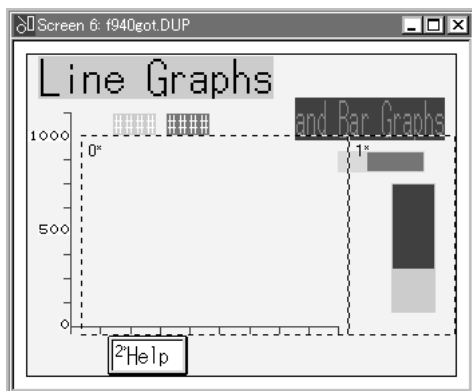


The following two methods are available to execute deletion. Perform either one.

1. Select "Edit" and "Cut" on the tool bar.
2. Press the [CTRL] and [X] keys at the same time.

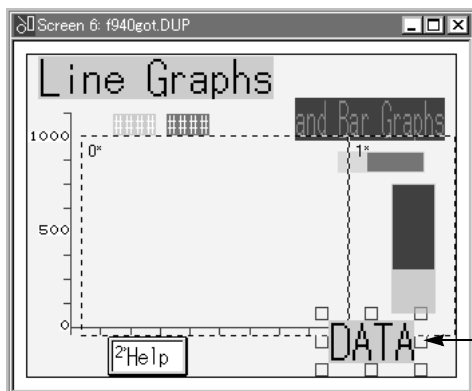
Drag the selected object by moving the mouse, and release the mouse button in a desired position.

[Drag] To point an object and move it while pressing the left or right button of the mouse.



Paste

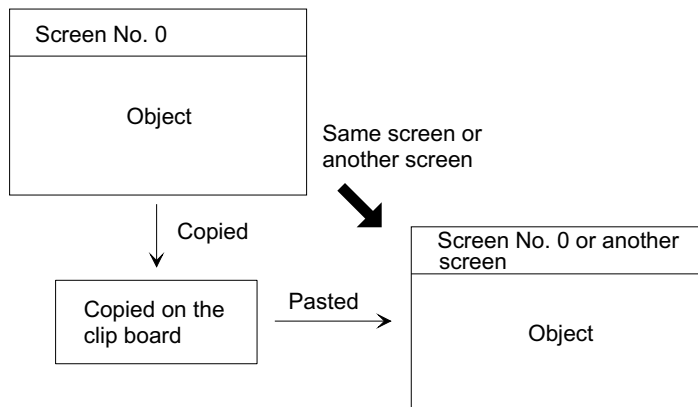
- 1) Make the transfer destination window active.
- 2) Paste the object to the transfer destination.
 The following two methods are available to execute paste. Perform either one.
 1. Select "Edit" and "Paste" on the menu bar.
 2. Press the [Ctrl] and [V] keys at the same time.



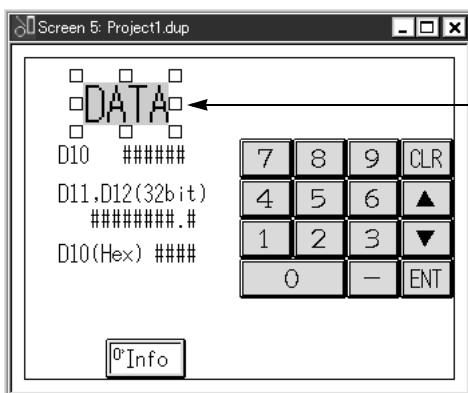
Display after paste is executed

Copy

This paragraph describes respectively the operating procedures to select an object on the screen being edited (copy source), copy it on the same screen, or copy it to another screen in the same file or a screen in a different file (project).

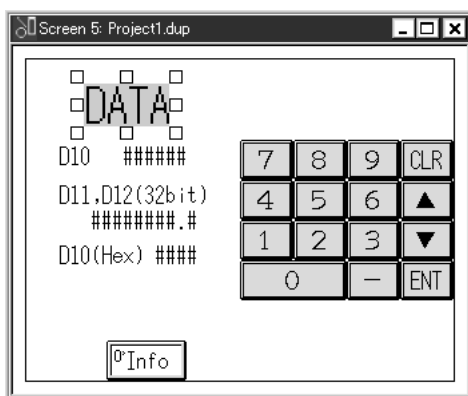


Copy (copy and paste) procedure



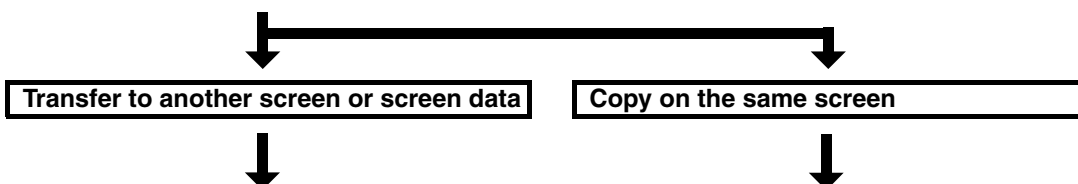
Copy

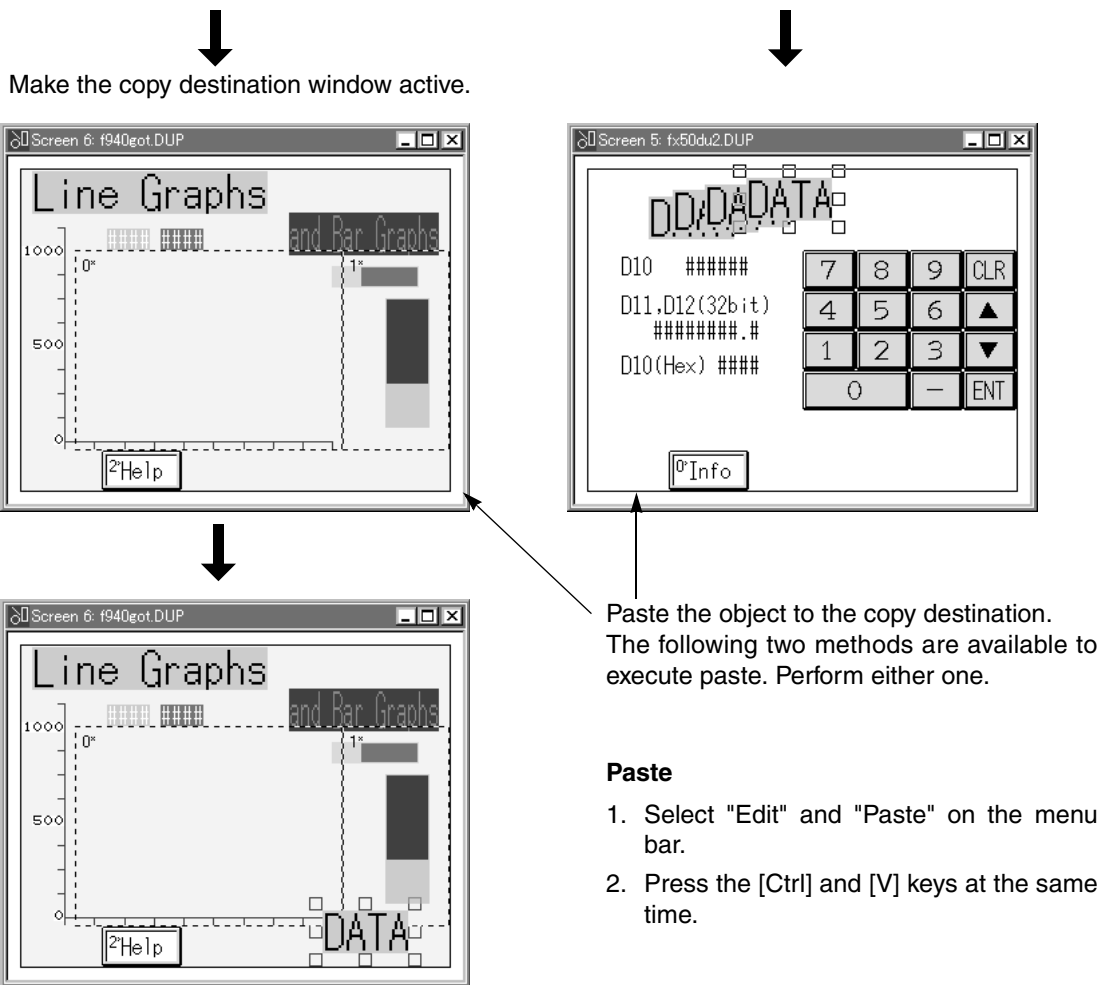
Click to select an object to be copied (text "DATA" in this example). When an object is selected, square marks are displayed at its four corners.



Copy the object to be copied to the clip board. The following two methods are available to execute copy. Perform either one.

1. Select "Edit" and "Copy" on the tool bar.
2. Press the [Ctrl] and [C] keys at the same time.





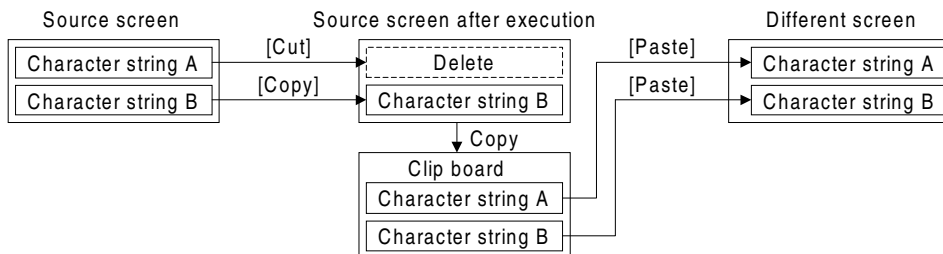
Data flow during transfer and copy

- When an object is transferred or copied, it is registered on the Windows clip board at first, then pasted as shown in the figure below.

Table:6.3 Relationship between commands and shortcut keys

Command	Shortcut keys
Edit - Cut	[Ctrl] key + [X] key
Edit - Copy	[Ctrl] key + [C] key
Edit - Paste	[Ctrl] key + [V] key

When an object is deleted by selection of "Edit" and "Cut", it is copied on the clip board. When it is deleted by pressing of the [Delete] key, it is not copied on the clip board.



Deletion, transfer and paste of two or more objects at a time

Two or more objects can be selected and edited at a time.

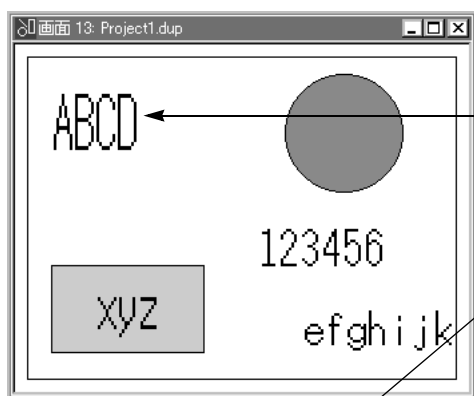
Two operating procedures are available: Objects can be selected one by one, or all objects in the specified area on the screen can be selected at a time.

Selecting objects one by one

While pressing and holding the [SHIFT] key, point objects to be selected using the mouse cursor and click them one by one in turn.

Objects hidden under other objects cannot be selected.

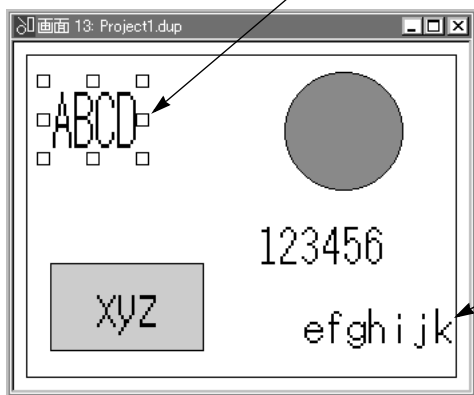
Example: When selecting "ABCD", "efghijk" and "■" (in no special order)



Select an object "ABCD" as the first one.

1) Point "ABCD" using the mouse cursor, and click it.

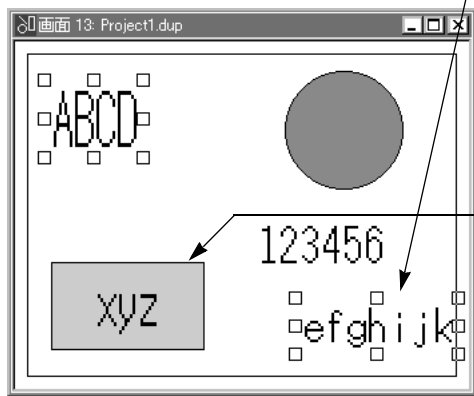
2) When clicked, squares are displayed at its four corners.



Select an object "efghijk" as the second one.

3) Point "efghijk" using the mouse cursor, and click it while pressing and holding the [Shift] key.

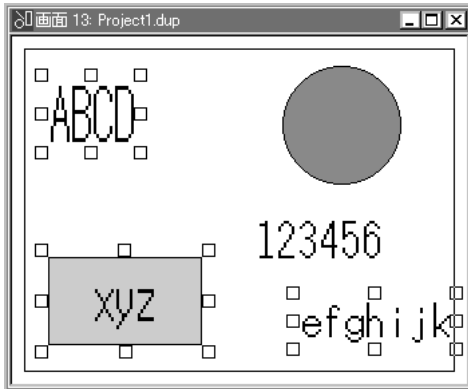
4) When clicked, squares are displayed at its four corners.



Select an object "■" as the third one.

5) Point "■" using the mouse cursor, and click it while pressing and holding the [Shift] key.

6) When clicked, squares are displayed at its four corners.

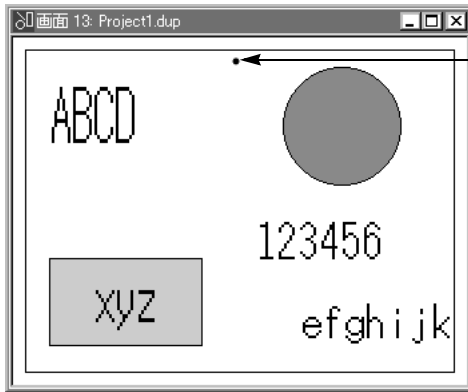


Now, these objects are selected. For deletion, copy or paste of them, refer to Paragraph 6.3 from its beginning.

Selecting all objects in the specified area at a time

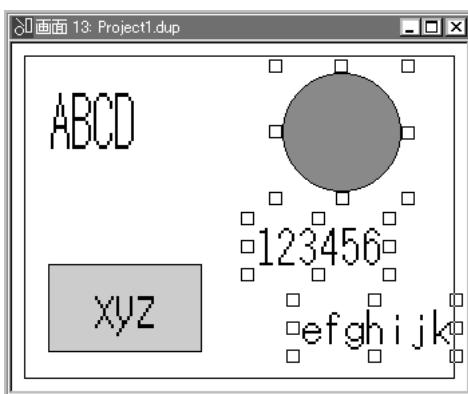
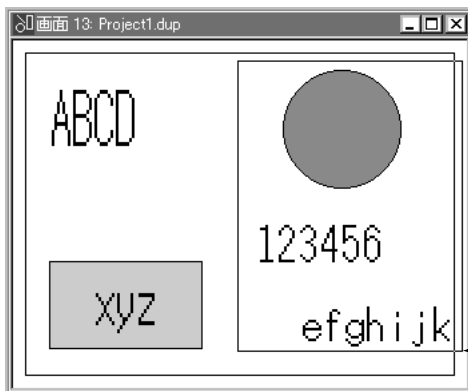
Point the start point of the area to be selected using the mouse cursor, drag the mouse to the end point while pressing the left button of the mouse, then release the left button. In this method, objects hidden under other objects can be also selected.

Example: When selecting "●", "123456" and "efghijk"



Specify the area so that all of the objects to be selected "●", "123456" and "efghijk" are included.

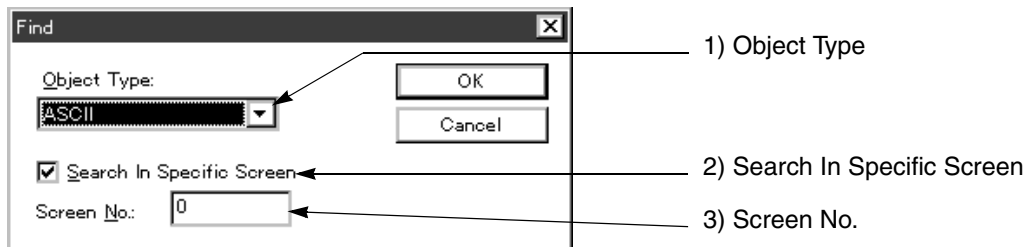
- 1) Point any corner of the desired area using the mouse cursor.
- 2) Drag the mouse to the opposite corner in the diagonal position, and release the mouse button.



Now, these objects are selected. For deletion, copy or paste of them, refer to the beginning of this paragraph.

6.3.2 Searching the use destination screen No. based on the object name

The “Find” command searches the objects registered on the user screen based on the object name, and displays the list of screen Nos. used. In addition, this command allows to modify the setting of the searched object.

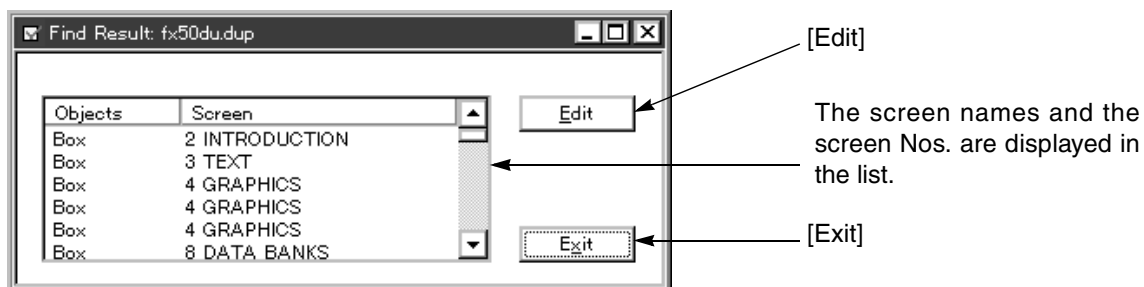


- [OK] Starts search. When search is finished, this search dialog box functions as the search result dialog box described below.
- [Cancel] Discards the modification entered, and closes the window.

Description on the input areas

- 1) Object Type
Select the object name to be searched.
The desired object can be selected in the drop-down list displayed when the box is clicked.
The objects displayed vary depending on the DU type.
- 2) Search In Specific Screen
Click this item to add the “✓” mark when executing search for the screen specified by the screen No. entered.
- 3) Screen No.
Specify the screen No. to be searched.
The available values range from “0” to “Maximum screen No. (varying depending on the DU type)”.
Example: 0 to 499 for the FX-50DU-TK(S)-E

Search result dialog box



Description on the commands

- [Edit] When the object in the list to be edited is pointed by the mouse, then double-clicked by the mouse or the Edit button is clicked, the setting window for the selected object is opened to allow modification of the setting.
- [Exit] Closes the search result window.

6.4 Jobs offered by the “View” command

The characters to be displayed in the DU and the image library data can be created. The diversified items can be set. The ON/OFF status of the tool bar displayed in the DU/WIN software can be specified.

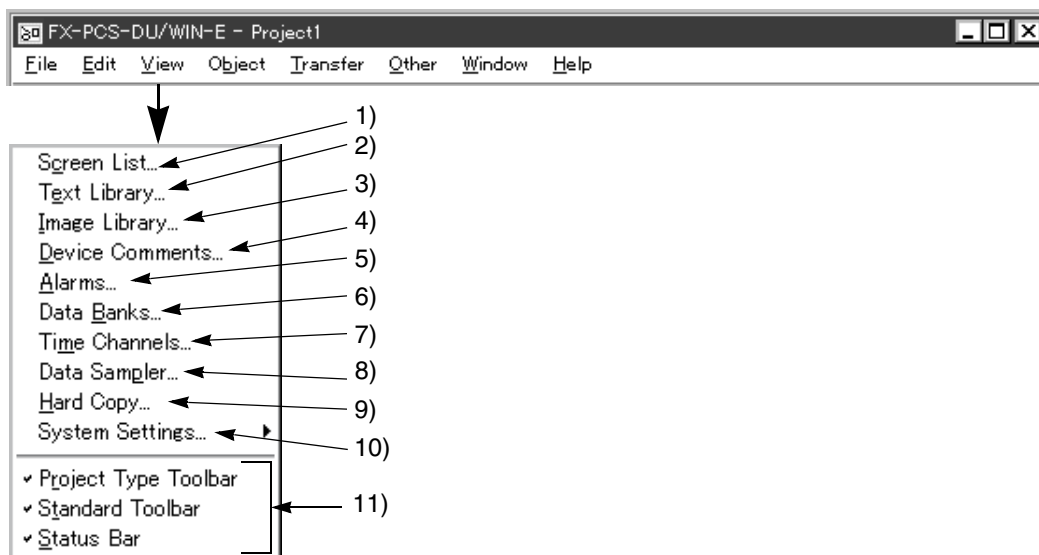


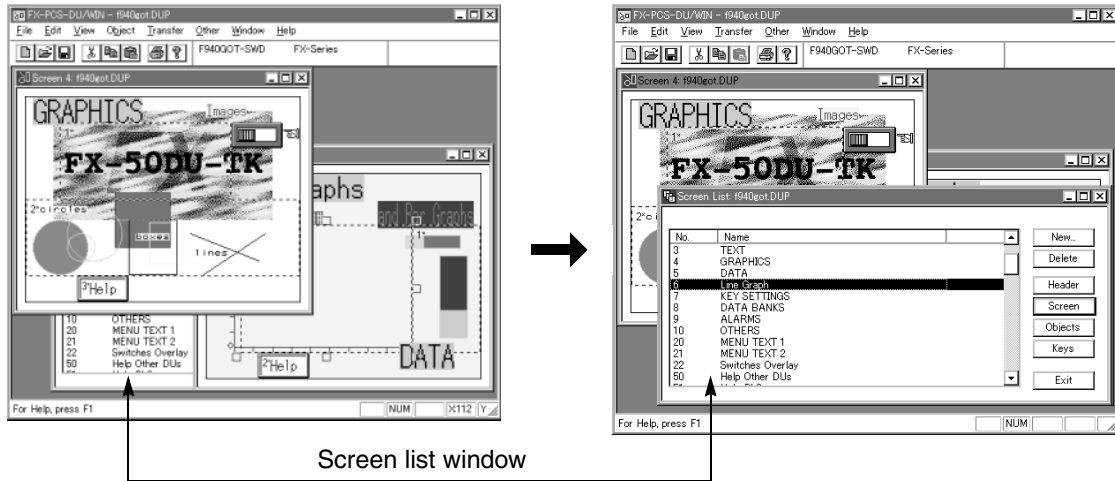
Table:6.4

		DU type							
		10DU	25DU	30DU	40DU (-TK)	50DU -TK	F940 GOT	F930 GOT*1	
1)	Turns on the screen list dialog box.	✓	✓	✓	✓	✓	✓	✓	
2)	Creates the character string data base displayed in the DU.	—	✓	—	—	✓	✓	✓	
3)	Creates the graphic data base displayed in the DU.	—	—	—	—	✓	✓	✓	
4)	Creates the device comments for the case where the devices of the PC are monitored.	—	—	✓	✓	✓	✓	—	
5)	Sets the alarm function of the DU.	—	✓	—	✓	✓	✓	✓	
6)	Creates the data base for the data file of the DU.	—	—	✓	✓	✓	✓	✓	
7)	Sets the time and the day of the week of the time channel of the DU.	—	—	—	—	✓	✓	✓	
8)	Sets the sampling condition of the DU.	—	—	—	✓	✓	✓	✓	
9)	Sets output of the screen image to the printer.	—	—	—	—	—	✓	—	
10)	Sets the basic items such as the DU type, the control devices, etc.	✓	✓	✓	✓	✓	✓	✓	
11)	Turns on/off the toolbar display in the DU/WIN software.	Object Toolbar	✓	✓	✓	✓	✓	✓	✓
		Object Settings	✓	✓	✓	✓	✓	✓	✓
		Project Type Toolbar	✓	✓	✓	✓	✓	✓	✓
		Standard Toolbar	✓	✓	✓	✓	✓	✓	✓
		Status Bar	✓	✓	✓	✓	✓	✓	✓

*1 The F920GOT-K and the F930GOT-K are included.

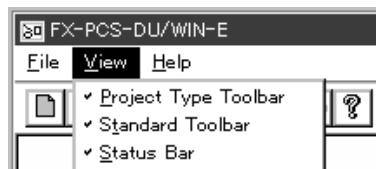
6.4.1 Displaying the screen list on the front

When many screen windows and display object dialog boxes are displayed in the DU/WIN software, the screen list dialog box is hidden below them. When the "Screen List" command is executed, the screen list window becomes active and is displayed on the front.



The "View" menu varies depending on the status.

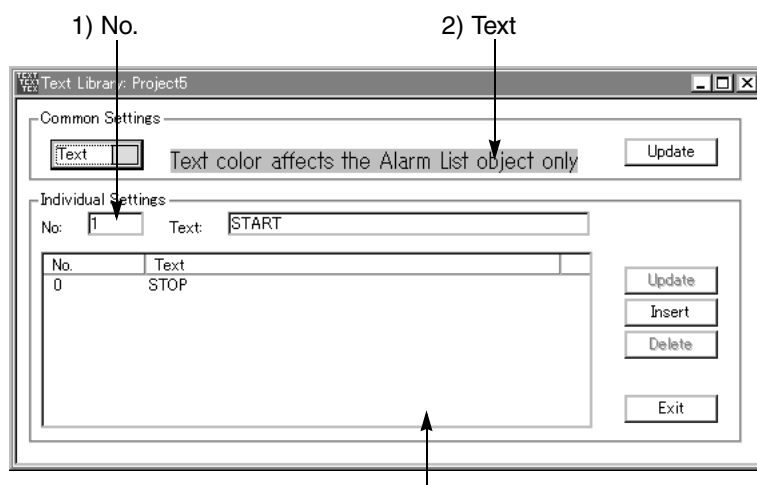
- The commands offered on the "View" menu shown above may vary because only the commands required for the selected function are displayed.
- On the basic screen displayed when the DU/WIN software is started up, the tool bar exclusively can be changed over as shown on the right.
- The function commands not available in the DU currently selected are displayed in gray, and cannot be selected.



6.4.2 Creating and editing the text library

The "Text Library" command allows to display in the DU the character string data base preliminarily registered to the DU by specifying the object "Library Text" or "Indicator (Character String)" from the PC. For the details of the library, refer to "7.2 Assigning character strings and graphics in libraries to the DU".

Text library creation dialog box



The Nos. and character strings already registered are displayed in the list.

Common set item

Ver2.4~ ► [Text] Sets the character color of the alarm message when "Object"- "Alarms"- "Alarm List" is set on the screen.

Individual set items

- [Update] Updates the character string registered to the characters entered.
Point the No. in the character string list registered to be modified using the mouse, and click it. Or enter a numeric to "1) No." (The background color of the selected data is changed, and the selected No. is displayed in "1) No.")
Enter the desired characters to "2) Text", and click the Update button.
- [Insert] Registers additionally the character string to the specified registration No.
Enter the No. to be added to "1) No.", enter the characters to be displayed to "2) Text", then click the Insert button or press the [Enter] key.
When the Insert button is clicked, "1" is added to "1) No."
- [Delete] Deletes the character string registered.
Point the No. or character string to be deleted from the character string list registered using the mouse (The background color of the selected data is changed, and the selected No. is displayed in "1) No."), then click the Delete button.
When selecting two or more consecutive character strings, point the head character string, then point the end character while pressing and holding the [Shift] key.
- [Exit] Closes and terminates the dialog box.

Description on the input areas

- 1) No. No. used when specifying directly the character string from the PC
- 2) Text Character string displayed in the DU

**Specifications of the text library**

“1) No.” and “2) Text” vary depending on the DU specifications as shown in the table below. When the input exceeds the specifications, an error occurs.

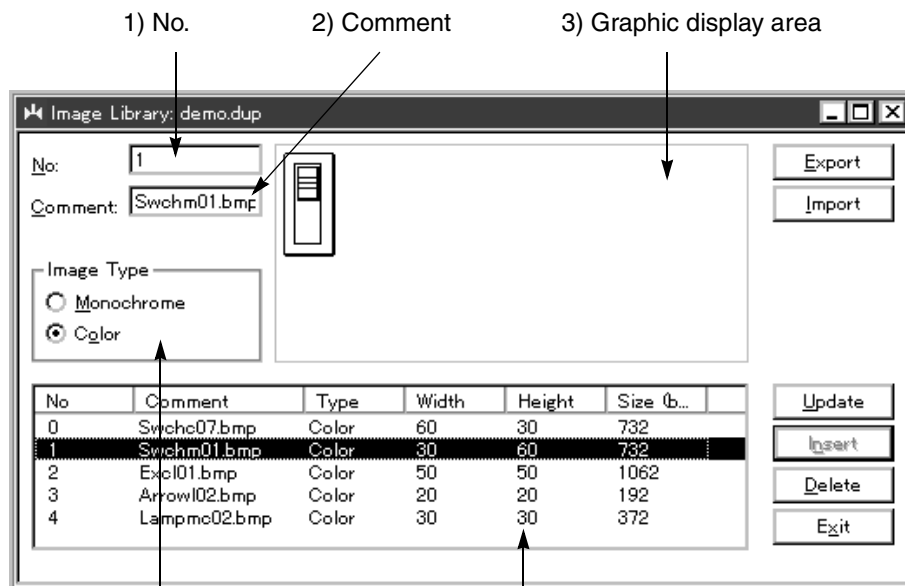
Table:6.5 Specifications of each DU type

DU type	1) No.	2) Text
25DU	0~99	20 half-width characters
50DU, F940GOT	0~199	40 half-width characters

6.4.3 Creating and editing the image library

The "Image Library" command allows to read only the data used in the DU from the indicator/switch graphic file preliminarily provided, register it, and display it in the DU.
 For the details of the library, refer to Paragraph o-o.

Image library creation dialog box



Displays the color type of the graphic displayed on the right area.

The Nos. , comments, types and sizes already registered are displayed in the list.

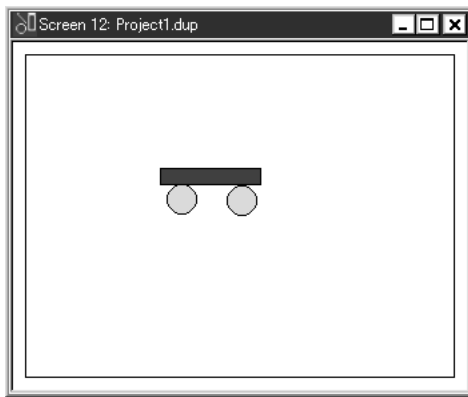
- [Export] Outputs the graphic displayed in "3) Graphic display area" to a bit-map format file.
- [Import] Receives (Inputs) a bit-map format file as the graphic specified by "1) No.". Graphics such as switches, indicators, etc. are offered as the screen data (DUP format). Utilize them.
- [Update] Updates the registered graphic to the imported graphic.
 1. Point the No. in the registered graphic list to be modified using the mouse, and click it. Or enter a numeric to "1) No." (The background color of the selected data is changed, and the selected No. is displayed in "1) No.")
 2. Enter the comment to "2) Comment" or import the graphic, then click the Update button.
- [Insert] Registers additionally the graphic to the registration No. specified. Enter the No. to be added to "1) No.", enter the comment to "2) Comment" or import the graphic, then click the Insert button or press the [Enter] key.
- [Delete] Deletes the graphic registered. Point the No. or the comment to be deleted from the graphic list registered using the mouse (The background color of the selected data is changed, and the selected No. is displayed in "1) No."), then click the "Delete" button. When selecting two or more consecutive graphics, point the head No. or comment line, then point the end line while pressing and holding the [Shift] key.
- [Exit] Closes and terminates the dialog box.


Description on the input areas

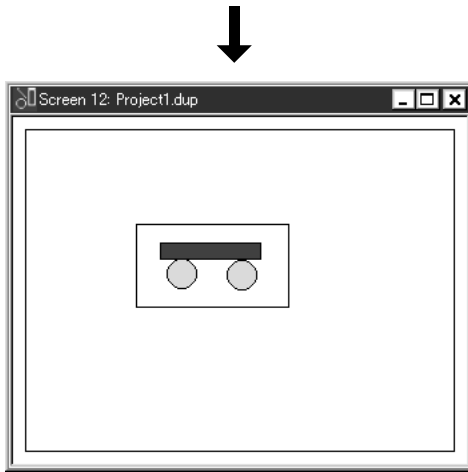
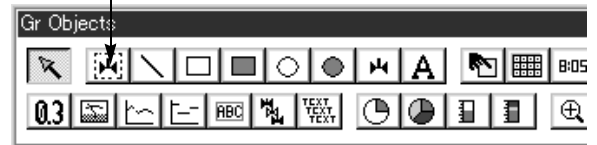
- 1) No.
The No. set here is used to specify the graphic from the PC for display
- 2) Comment
The comment set here is displayed as the comment in the graphic list registered so that the contents of the graphic can be estimated.
- 3) Graphic display area
The graphic selected or imported is displayed here to allow confirmation.

Creating graphics on the user screen

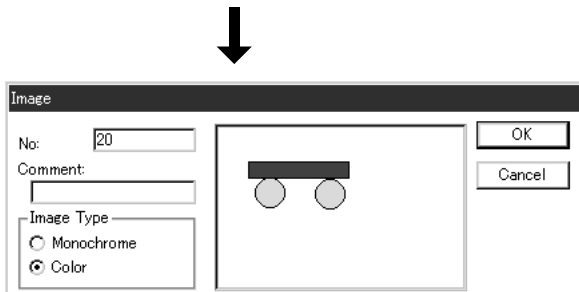
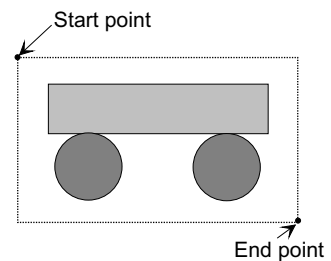
The desired range on the user screen consisting of objects can be specified and displayed as images in the image library. In other words, graphics can be created on the user screen using objects such as characters, straight lines and circles.



1. Create a graphic using objects (such as ● and ■) on the Screen window.
2. Click the  button (graphic generation) in the Display Object tool box.



3. On the Screen window, specify the range to be registered as a graphic using the mouse. Move the mouse cursor to the start point, drag it to the end point, then release the mouse button.



4. The Image library dialog box is open, and the graphic is registered in the library.

Creating the graphic data using the paint software

A bit map file (*.bmp) offers the image data which can be handled by the Windows.

A graphic can be created and the graphic data (bit-map format file) in the DU and the F940GOT can be changed using the paint software offered as standard in the Windows or the commercial application software. The number of colors of the corresponding bit-map file is 2 (black and white) or 16. A bit-map file using 256 colors or 24-bit colors may not be correctly displayed in the DU. In such a case, reduce the number of colors of the data to 16.

Paint software

The paint software is offered by selecting "Start", "Program" and "Accessory" of the Windows.

When it is not provided, install additionally the paint software using the Window file function in "Add/Delete Application" offered by selecting "Start", "Set" and "Control Panel".

☞ For the details, refer to the Windows manual.



Image library specifications

When the input given to “1) No.”, “2) Comment” or the graphic size to be imported exceeds the specifications, an error occurs.

Table:6.6 Specifications

1) No.	2) Comment	Graphic size		
		F940GOT	F930GOT	50-DU-TK
0~199	20 half-width characters maximum	320 (lateral) × 240 (longitudinal) dots maximum	240 (lateral) × 80 (longitudinal) dots maximum	256 (lateral) × 240 (longitudinal) dots maximum

Table:6.7 Bit-map file specifications

Number of colors	2 (black and white) or 16
Size	256 (lateral) x 240 (longitudinal) dots maximum

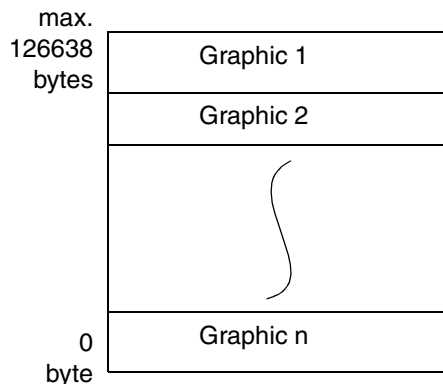
Ver2.2~▶

In the F940GOT (except the F920GOT-K/F930GOT(-K)), the available graphic size in a BMP file is increased from "256" to "320" dots in the lateral direction.

Reference of the capacity required to register the image library

The memory capacity of the image library is 126638 bytes maximum. It becomes reduced as graphics are registered.

The data quantity varies depending on the graphic size and the number of colors, so the number of graphics which can be registered varies accordingly.



☞ For the confirmation procedure, refer to "6.6.2 Displaying the memory use capacity".

Table:6.8

Data type	Graphic size	Data quantity (bytes)	Number of graphics
Which can be set (reference)	256×240dots	23052	5
	80×30dots	912 *1	138
Black and white (2 colors)	256×240dots	7692	16

*1 When No. 0 (80 × 30 dots) in the graphic data file (FRAMEB01.BMP) is used.

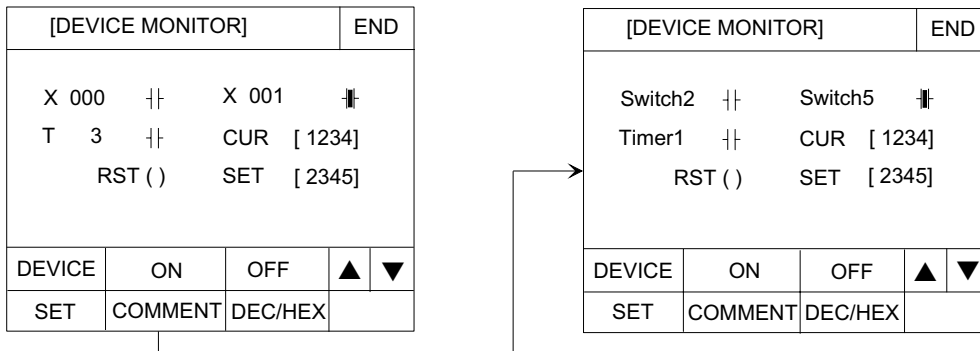
6.4.4 Creating and editing the device comment

The "Device Comments" command allows to set the comment to be displayed in the device No. on the device monitor screen built in the DU.

Device monitor in 30DU, 40DU, 40DU-TK, 50DU-TK and F940GOT

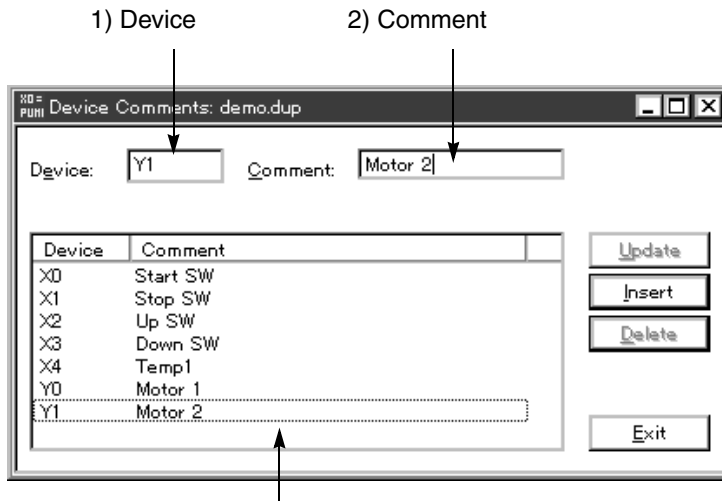
In the DU and the F940GOT, there is a screen (system) to monitor devices of the PC, set devices forcedly to ON/OFF and change constants.

The device name on this monitor screen can be displayed using a comment set here.



This screen is not displayed in the DU/WIN software.

Device comment creation dialog box.



The device Nos. registered and the comments entered are displayed in the list.

- [Update] Updates the registered device comment to the entered characters.
 1. Point the No. in the registered device list comment to be modified, and click it. (The background of the selected data is changed, and the selected No is displayed in "1) No.")
 2. Enter the comment to "2) Comment", and click the Update button.
- [Insert] Registers additionally comment to the specified registration No.
 Enter the device No. to be registered to "1) Device". Enter the comment to "2) Comment". Then, click the Insert button or press the [Enter] key.
- [Delete] Deletes the device comment registered.
 Point the No. or the device comment to be deleted from the device comment list registered using the mouse (The background color of the selected data is changed, and the selected No. is displayed in "1) No."), then click the "Delete" button.
 When selecting two or more consecutive device comments, point the head line, then point the end line while pressing the [Shift] key.

Description on the input areas

- 1) Device
Enter the device No. of the PC. The list is displayed based on the device entered.
- 2) Comment
The comment entered here is displayed instead of the device No. in the DU. For a device for which comment is not entered, the device No. is displayed.

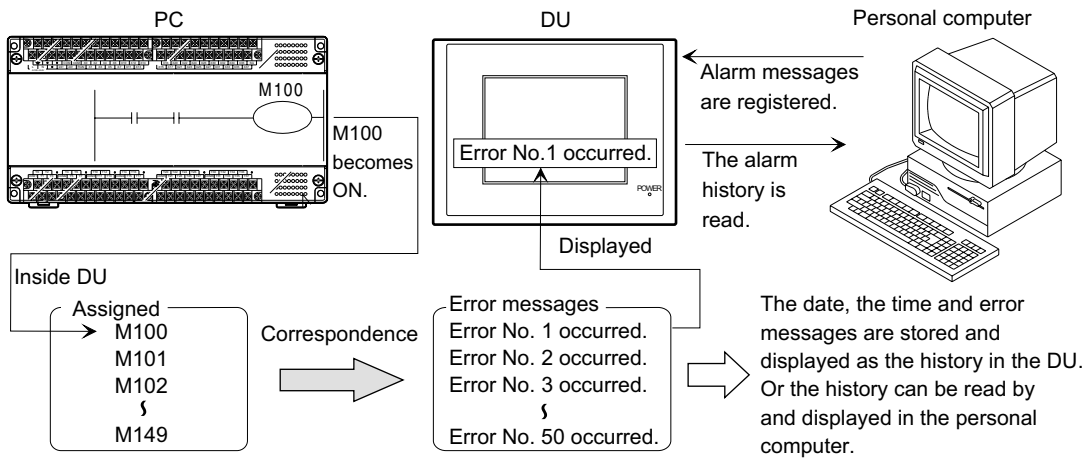
**Device comment specifications**

- The device and the range which can be entered to “1) Device” vary depending on the model selected by the PC set in “Project Settings”.
☞ For the details, refer to the operation manual of the DU or the F940GOT.
- The number of characters which can be entered as “2) Comment” is 8 half-width characters or 4 full-width characters maximum.
If the input exceeds the limit, an error occurs.

6.4.5 Creating and setting the alarm message

The "Alarms" command allows to create the alarm message to be displayed in the DU. By setting the screen changeover, printout to the printer, etc., this command can offer the alarm message and the action corresponding to the bit device from the PC.

Alarm message function



Alarm setting window

The screenshot shows the "Alarms: fx50du.dup" window. It is divided into "Common Settings" and "Individual Settings".

Common Settings:

- Head Address: M10
- Nbr of Alarms: 3
- Display Pos.: Lower
- Buttons: Update (labeled a), Clear

Individual Settings:

- Message: Value High
- Report: Overlapped
- Scr. No.: 0
- Think Mitsubishi
- Options: Print, Acknowledge, Reset
- Buttons: Update (labeled b), Clear (labeled c)

Table:

No.	Device	Message	Print	Ack	Reset	Report	Scr. No.
0	M10	Value High	*	*	Overlapp...	0	
1	M11	Value OK			None	0	
2	M12	Value Low		*	Overlapp...	0	

Additional labels in the diagram: 1) Head Address, 2) Number of Alarms, 3) Display Pos., 4) Message, 5) Report, 6) Scr No., 7) Options, and an Exit button (labeled d).

The alarm message registered and the setting status are displayed.

Common set items

Set the items shared by the entire alarm function.

- a) Update Updates to a value entered to each common set item. When the number of alarms is modified and the Update button is clicked, the confirmation dialog box is opened. This dialog box is displayed when the value entered is different from the number of data registered. When the number of alarms entered is smaller than the number of data registered, excessive messages registered are deleted. Pay rigid attention.

Individual set items

Set the message, the report method, etc. for each alarm.

- b) Update Updates to a value entered to the individual set item.
- c) Clear Deletes the contents of the set items of the alarm message selected.
- d) Exit Closes the alarm setting window.

Description on the input areas

- 1) Head Address
Specify the head device No. to assign the alarm message to the bit device of the PC.
- 2) Number of Alarms
Specify the number of points to be used starting from "1) Head Address".

25DU, 40DU, 40DU-TK and 50DU-TK

Up to 50 points are available.

F940GOT

Up to 256 points are available.

To delete all the contents registered, enter "0".

- 3) Display Pos.
When "Window" is specified as the report method described below, the message is displayed as a window in the upper, medium or lower position of the screen when the alarm device is turned on. (This setting is valid for all the screens.)
- 4) Message
Enter the message to be assigned to each alarm device, displayed in the DU screen when the alarm device is turned on or when the alarm status monitor or alarm history/count is performed.

25DU, 40DU, 40DU-TK, 50DU-TK and F940GOT

20 half-width characters or 10 full-width characters maximum

- 5) Report
Select the method to report to the operator that the alarm device is turned on.
 - When "None" is specified, nothing is reported on the screen. However, the alarm history is recorded.
 - When "Window" is specified, the message is displayed as the window on the DU screen when the alarm device is turned on.
The display position can be selected among "Upper", "Medium" and "Lower" in "Display Pos" on the setting window.
 - When "Screen Changeover" is specified, the screen No. specified by "6) Scr No." is displayed when the alarm device is turned on.
The screen No. before changeover is automatically saved. Accordingly, by registering "Changeover destination: Memory" to the screen changeover object on the changeover destination screen, the original screen can be displayed again when the alarm device is changed from ON to OFF.

25DU, 40DU, 40DU-TK and 50DU-TK

The reporting method can be set for each alarm No.

F940GOT

One reporting method is shared by all alarm Nos. Accordingly, when the reporting method is changed, the contents of change are reflected on all alarm Nos.

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When "Moving Alarm" is specified, the message of the alarm device in the ON status flows at the bottom of the screen.

- 6) Scr No.
Enter the screen No. which is regarded as the changeover destination when "Screen Changeover" is specified in "5) Report". When the corresponding alarm is selected on the alarm status display screen in the DU, the screen set here is displayed.
For entering the screen No., the desired No. can be directly entered or the screen name can be selected.

7) Options

Select an action to be performed in the 50DU-TK or the F940GOT when an alarm device in the PLC becomes ON.

•Print

When an alarm device becomes ON, the 50DU-TK or the F940GOT prints out one by one the date and time when the alarm occurred and a corresponding alarm message. (For the printer connection method, refer to the Operation Manual of the 50DU-TK or the F940GOT.)

•ACK (acknowledge)

When an alarm device becomes OFF from ON, if the 50DU-TK or the F940GOT stores the status change but does not perform the ACK (acknowledge) operation, it is displayed as a current alarm on the DISPLAY STATUS screen. Set this option to an alarm for which acknowledge is required.

☞ (For the details of the ACK operation, refer to the Operation Manual of the 50DU-TK or the F940GOT.)

•RST (Reset)

When an alarm is selected on the DISPLAY STATUS screen in the 50DU-TK or the F940GOT and the [Enter] key (in the 50DU-TK) or the [RESET] key (in the F940GOT) is pressed, a corresponding alarm device in the PLC is reset.

☞ (For the details of the RST operation, refer to the Operation Manual of the DU or the F940GOT.)

**The specifications are partially different in the F920GOT.**

"Print" in "Options" is not available.

**Alarm message specifications**

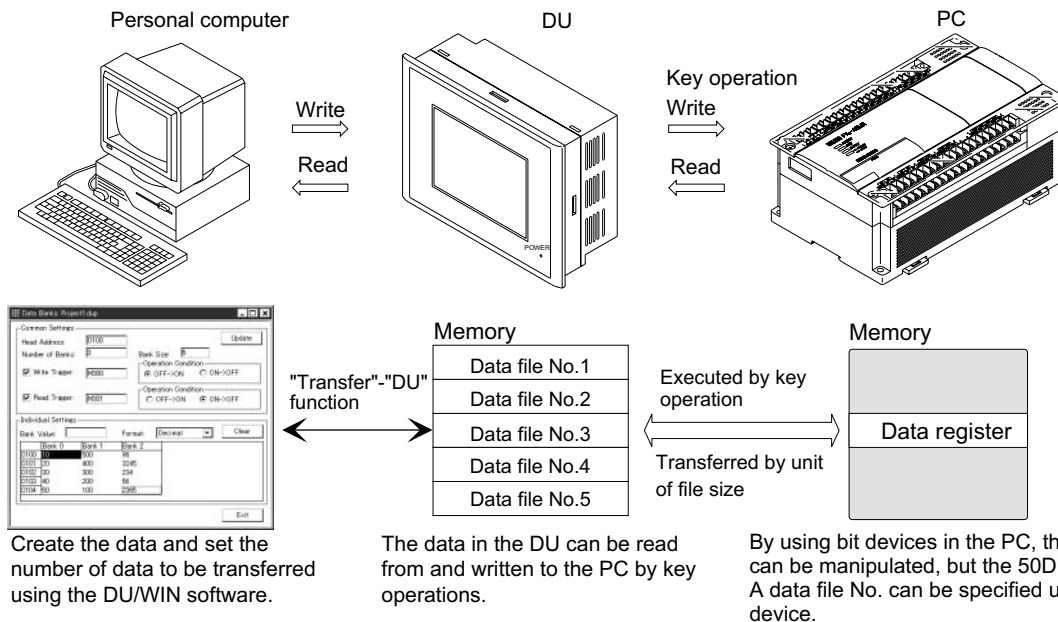
The maximum number of characters which can be entered to "4) Message" is 20 half-width characters or 10 full-width characters.

When the data is output to a printer connected to the DU or the F940GOT, messages should consist of half-width characters (Katakana characters, numerics and symbols). If Kanji characters have been entered, abnormal characters are printed out.

6.4.6 Creating and setting the data for the data file

By registering two or more data files to the DU, data can be transferred by the unit of specified file size (number of data) between the specified data register of the PC.

Data file function



Data file setting window

50DU-TK

1) Head Address
2) Number of Banks
3) Bank Size

The screenshot shows the 'Data Banks: fx50du.dup' window. It has two sections: 'Common Settings' and 'Individual Settings'. In 'Common Settings', 'Head Address' is set to 'D100', 'Number of Banks' is '3', and 'Bank Size' is '5'. In 'Individual Settings', 'Bank Value' is '10' and 'Format' is 'Decimal'. Below these is a table with columns for 'Bank 0', 'Bank 1', and 'Bank 2', and rows for data registers 'D100' through 'D104'. Arrows point from the numbered labels to the corresponding fields in the window.

	Bank 0	Bank 1	Bank 2
D100	10	500	96
D101	20	400	3245
D102	30	300	234
D103	40	200	56
D104	50	100	2365

4) Bank Value
5) Format

The data values of the data file registered are displayed in the table.

How to look at the table

- Longitudinal axis (data register) Displays from the head address entered by the bank size entered.
- Lateral axis (bank) Displays from 0 to the number of banks entered.

F940GOT

1) Head Address 2) Number of Banks 3) Bank Size

4) Bank Value 5) Format

6) Write Trigger

7) Read Trigger

How to look at the table

- Longitudinal axis (data register)
Displays from the head address entered by the bank size entered.
- Lateral axis (bank)
Displays from 0 to the number of banks entered.

The data values of the data file registered are displayed in the table.

Common set items

Set the items shared by the entire alarm function.

[Update] Updates to a value entered to each common set item.
When the number of files or the file size is modified and the Update button is clicked, the confirmation dialog box is opened.
This dialog box is displayed when the value entered is different from the number of data registered. When the number of files entered is smaller than the number of data registered, excessive data registered is deleted. Pay rigid attention.

Individual set items

[Clear] Clears the data value entered to "0".
[Exit] Closes the data file setting window.

Description on the input areas

- 1) Head Address
Specify the head No. of the data register (D) of the PC to transfer data between the DU and the data register of the PC.
To delete all the contents registered, enter "0".
In the FX Series PC, the file register (D1000 to D2999, D6000 to D7999) can be specified. (The file register specifications vary depending on the model and the version. Confirm the device range of the PC connected before setting.)
- 2) Number of Banks
Set the number of data files.
2) Number of Banks $\leq 4,000 \div 3$) Bank Size
- 3) Bank Size
Set the number of data saved in one file.
3) Bank Size $\leq 4,000 \div 2$) Number of Banks
- 4) Bank Value
Enter the data value using a decimal or hexadecimal numeric specified in "5) Format". A value in the range which can be set by the word device (D) of the PC can be entered.
In the FX Series PC, the 16-bit numeric range which can be handled by the word device is available. (Decimal: -32768 to + 32767, Hexadecimal: 0 to FFFF)
- 5) Format
Changes over between decimal and hexadecimal the data format displayed in the data file list registered and entered to "4) Bank Value".
- 6) Write Trigger
A bit device in the PC can be specified as a switch to execute transfer (write) of a file register value in the F940GOT to a data register in the PC.
Set a check mark to "Write Trigger", and enter a bit device which executes write.
As the operation condition, select "OFF \rightarrow ON" for rising or "ON \rightarrow OFF" for falling.
In the 50DU-TK and the F940GOT, a data file No. to which data is to be transferred can be specified by a control device (D+6).
- 7) Read Trigger
A bit device in the PC can be specified as a switch to execute transfer (read) of a data register in the PC to a data file in the F940GOT.
Set a check mark to "Read Trigger", and enter a bit device which executes read.
As the operation condition, select "OFF \rightarrow ON" for rising or "ON \rightarrow OFF" for falling.
In the 50DU-TK and the F940GOT, a data file No. to which data is to be transferred can be specified by a control device (D+6).



Number of files and data size available

- A value within the range of 1 to 4000 can be entered to "2) Number of Banks" and "3) Bank Size". However, the number of files is limited as follows, and only less than 4000 files may be available.
 - "Bank Size" \times "Number of Banks" shall be equivalent to or less than 4000.
 - Data register (D) in the PC shall be more than "Bank Size".

Example: In the FX₂ PC (1000 data registers from D0 to D999 are provided.)

Bank Size: 3000

Number of Banks: 1

Transfer destination: D0

Cannot be set. (Though the number of registers in the PC is 1000, the bank size is 3000.)

6.4.7 Setting the time channel

The “Time Channels” command turns on/off the specified bit device of the PC when the time on the day of the week set by the clock and the calendar function built in the DU has come.

Time channel setting window

1) Head Bit Device 2) Weekdays 3) Start Time/End Time 4) Comment

Common Settings
Head Bit Device: a) [Update]

Individual Settings
Weekdays: Su Mo Tu We Th Fr Sa b) [Update]
 c) [Clear]

Start Time: : : End Time: : :

Comment:

No	Device	Comment	Su	Mo	Tu	We	Th	Fr	Sa	Start	End
0	M100		*	*	*	*	*	*		10:00:00	17:00:00
1	M101		*							19:25:00	20:14:00
2	M102									00:00:00	00:00:00
3	M103			*		*		*		09:30:00	10:00:00
4	M104									00:00:00	00:00:00
5	M105									00:00:00	00:00:00
6	M106									00:00:00	00:00:00
7	M107									00:00:00	00:00:00

The setting status of each of the time channel Nos. 0 to 7 is displayed.

Common set item : Set the item shared by all the time channels.

- a) Update Updates to a value entered to the common set item.

Individual set items : Set the individual set items for each time channel No.

- b) Update Updates to a value entered to each individual set item.
- c) Clear Clears the time channel No. selected.

Description on the input areas

- 1) Head Bit Device
Specify the head bit device No. of the PC to be turned on/off in accordance with each of the eight time channel Nos.
The devices of the PC are occupied for 8 bit devices starting from the head bit device.
- 2) Weekdays
Select the day of the week to add the check mark on which the bit device is turned on/off at the time set by “3) Start Time/End Time”.
- 3) Start Time/End Time
Move the cursor to “hour:minute:second” using the mouse, and enter the desired numeric directly using the numeric keys. Or click the button using the mouse to set the desired time.
- 4) Comment
Enter the comment for the time set in the list below.
Comments are not displayed in the F940GOT.



To clear the all data

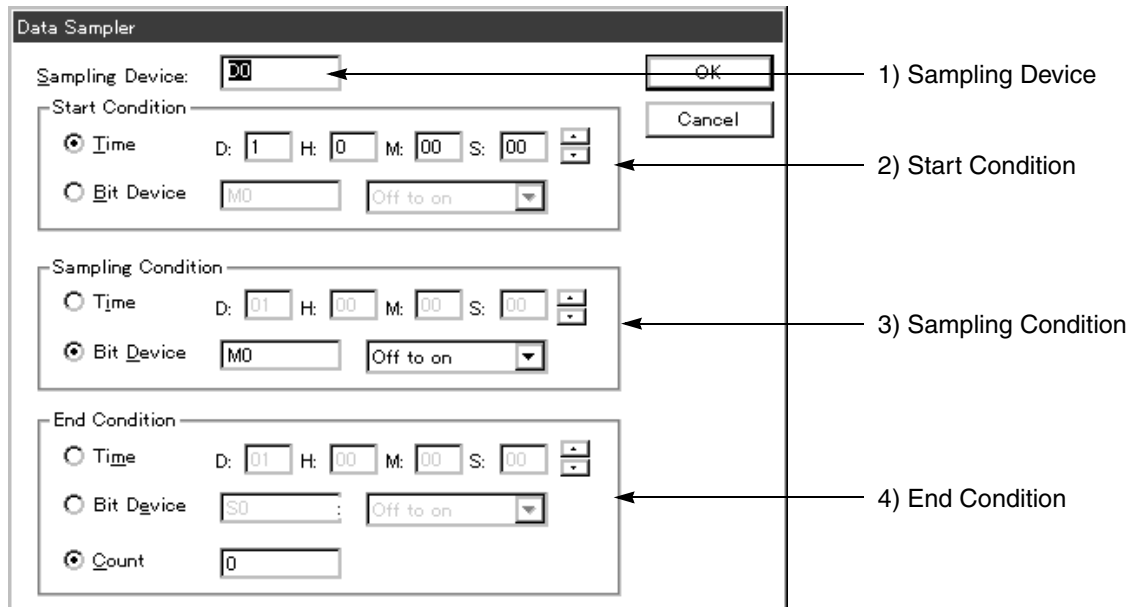
Click the head No. of the time channels shown in the list to be deleted.
While pressing and holding the [Shift] key, click the end No. to select the range to be deleted, then click the Clear button.

6.4.8 Setting the sampling condition

The "Data Sampler" command allows to read the current value of the data register (D) of the PC under the set condition and save it to the DU.

The sampling result saved in the DU can be read and displayed by the DU/WIN software.

Sampling setting dialog box



- [OK] Saves the modification entered, and closes the dialog box.
- [Cancel] Discards the modification entered, and closes the dialog box.

Description on the input areas

- 1) Sampling Device
Enter the data register (D) No. to be sampled to the DU memory.
- 2) Start Condition
Specify the sampling start condition by entering the time using the clock built in the DU or entering the bit device of the PC.
Time: Enter day, hour, minute and second (from 1st 0:0:0 to 31st 23:59:59).
Bit Device: Enter the bit device (X, Y, M, T, C or S) and the No. of the PC. As the trigger, select whether the signal specified by the bit device rises (changes from OFF to ON) or falls down (changes from ON to OFF).
- 3) Sampling Condition
Specify the timing at which the numeric assigned to the data register specified by "1) Sampling Device" is read to the DU by specifying the cycle of the clock built in the DU or specifying the bit device of the PC.
Cycle: Enter day, hour, minute and second (from 1st 0:0:0 to 9th 23:59:59).
Device: Enter the bit device (X, Y, M, T, C or S) and the No. of the PC. As the trigger, select whether the signal specified by the bit device rises (changes from OFF to ON) or falls down (changes from ON to OFF).
- 4) End Condition
Specify the sampling end condition by entering the time using the clock built in the DU, entering the bit device of the PC or entering the number of times of sampling.
Time: Enter day, hour, minute and second (from 1st 0:0:0 to 31st 23:59:59).
Bit Device: Enter the bit device (X, Y, M, T, C or S) and the No. of the PC. As the trigger, select whether the signal specified by the bit device rises (changes from OFF to ON) or falls down (changes from ON to OFF).
Number of times: Enter the number of times of sampling. (Up to 2000 times is available when "cycle" is specified as the sampling condition. Up to 800 times is available when "bit device" is specified as the sampling condition.)



How to display the sampling data in the DU/F940GOT

- 1) Select "Transfer" and "DU" in the DU/F940GOT to specify the sampling result, and execute "Read".
- 2) Select "Other" and "Sampling Data" to display the sampling result.

6.4.9 Creating logos, symbols, etc. using the external character creation function

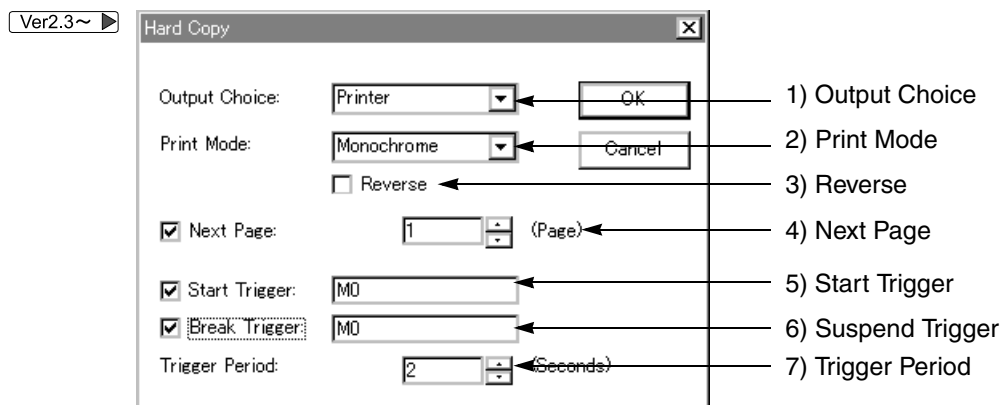
This function is not provided in the FX-PCS-DU/WIN-E (English version). It is dedicated to the FX-PCS-DU/WIN (Japanese version.)

By using a command "External Character", a character pattern, logo and symbol can be created in the area of 16×16 matrix.

When displaying Kanji characters of JIS Level 2, create them as external characters.

6.4.10 Outputting the screen image to the printer (hard copy)

The "Hard Copy (H)" command allows to set the condition for outputting the screen image to the printer connected to the F940GOT in serial communication (RS-232C).
(This command is not supported in the F930GOT.)



Description on the input areas

- 1) Output Choice
Only a printer connected to the RS-232C interface of the F940GOT is available. A printer equipped with the ESC/P J84 code and the RS-232C interface is available.
- 2) Print Mode
Only the print mode is available because "1) Output Choice" is set to a printer. Only "Monochrome" is supported for the F940GOT. If the F940GOT is the color LC type and a color screen is printed, colors are converted as shown in the table below.

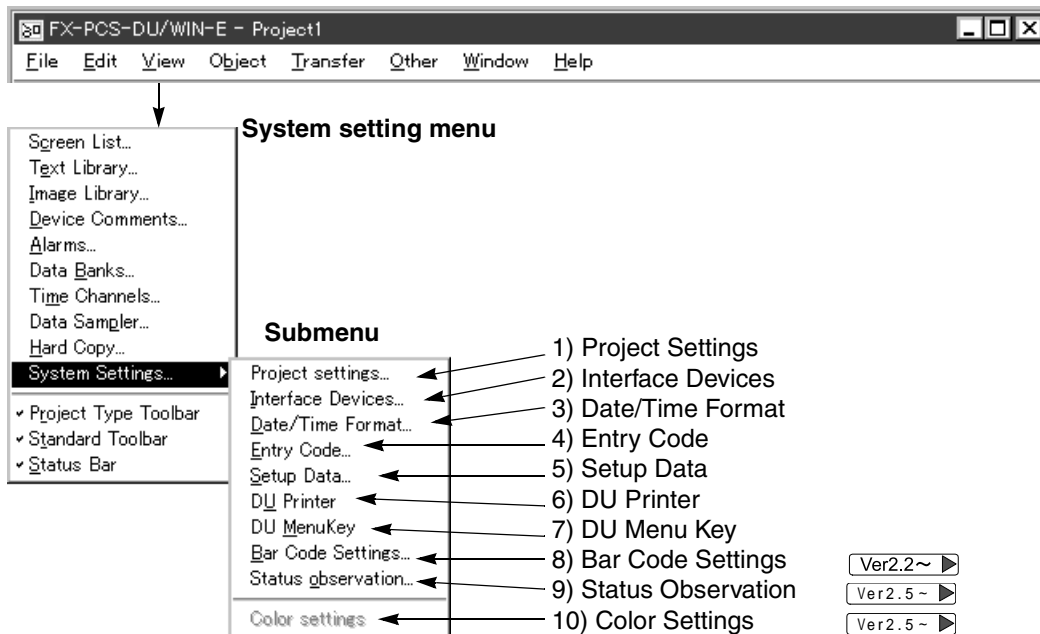
Table:6.9

Before color conversion (displayed on screen)	After color conversion (printed image)
Black	Black
Red	
Blue	
Green	
Light blue	White
Purple	
Yellow	
White	

- 3) Reverse
When this item is set to ON, black and white in monochrome print is reversed each other.
- 4) Next Page
Set whether the page is to be changed after 1 to 4 screens are printed.
- 5) Start Trigger
Print can be started by a bit device of the PLC. Click to check the check box, and input a bit device which triggers print.
- 6) Suspend Trigger
Print can be suspended by a bit device of the PLC.
- 7) Trigger Period
In the cycle set here, the status of the bit devices set in "5) Start Trigger" and "6) Suspend Trigger" are monitored.
Set range: 2 to 60 seconds (unit: 1 second)

6.4.11 Arranging the DU operation environment by the system setting

The following submenu is offered by “System Settings” so that the DU operation environment can be set.



Correspondence table between DU model and system setting

Table:6.10

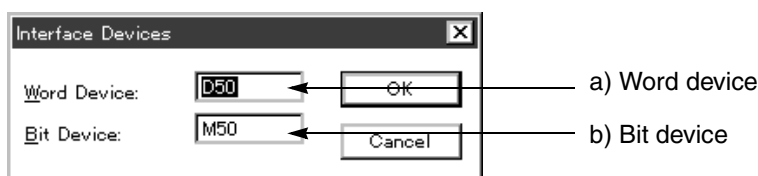
✓: Can be set —: Cannot be set

System setting	10DU	25DU	30DU	40DU	40DU-TK	50DU-TK	F940W GOT	F940 GOT	F930 GOT	F920 GOT-K
1) Project Settings	✓	✓	✓	✓	✓	✓	V2.5~	✓	✓	✓
2) Interface Devices	—	✓	✓	✓	✓	✓	V2.5~	✓	✓	✓
3) Date/Time Format	—	✓	✓	✓	✓	✓	V2.5~	✓	✓	✓
4) Entry Code	—	—	✓	✓	✓	✓	V2.5~	✓	✓	✓
5) Setup Data	—	—	—	—	—	✓	V2.5~	✓	✓	✓
6) DU Printer	—	—	✓	✓	✓	✓	V2.5~	✓	✓	—
7) DU Menu Key	—	—	—	—	—	✓	V2.5~	✓	✓	—
8) Bar Code Settings	—	—	—	—	—	—	V2.5~	V2.2~	V2.3~	—
9) Status Observation	—	—	—	—	—	—	V2.5~	V2.5~	V2.5~	✓
10) Color Settings	—	—	—	—	—	—	V2.5~	V2.5~	V2.5~	—

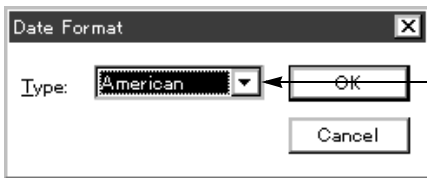
The F930GOT-K is same as the F930GOT shown in the table above.

Commands on submenu

- 1) Project settings
Set the DU type, the PLC and the DU language.
The DU type, etc. already set as the DU screen data can be modified here.
By this function, the data of the current DU can be converted and used for another DU. However, the data of the 10DU cannot be converted for another DU, and the data of another DU cannot be converted for the 10DU.
- 2) Interface Devices
Set the head device to specify changeover of the screen, monitor the screen No. displayed in the DU, and transfer the information such as battery reduction of the DU, cascading of screens, etc. from the PC.



- a) Word device
A data register (D) exclusively can be set. Enter the device No. within the range in accordance with the PC connected. Make sure that the No. entered does not exceed the maximum No. occupied.
 - b) Bit device
An internal contact (M) exclusively can be set. Enter the device No. within the range in accordance with the PC connected. Make sure that the No. entered does not exceed the maximum No. occupied.
- For the contents controlled between the PC and the DU and the contents of the DU status information, refer to Paragraph 9.
- 3) Date/Time Format
Set whether the date displayed in the DU is the European type or the USA type.

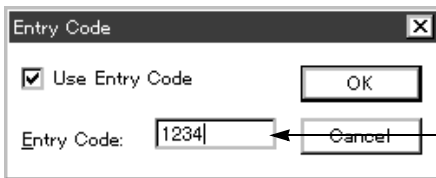


Select either one between the European type and the USA type in the drop-down list.

To display the date in the DU, the required object should be set by selecting "Object", "Date /Time" and "Date".

- 4) Entry Code
Set the No. to be entered to the entry code input window required to display the screen protected by the screen protection function while the DU screen is changed over.

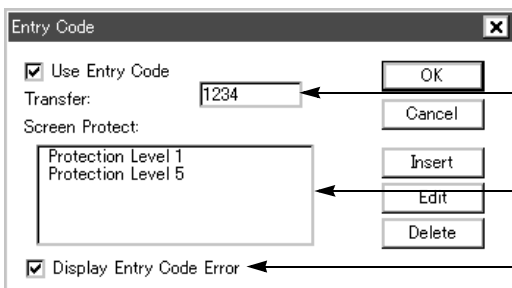
30DU, 40DU, 40DU-TK and 50DU-TK



a) Entry Code

- a) Entry Code
Enter a 4-digit numeric within the range of 0000 to 9999.
Example: 123 = × ABC4 = × 1234 = ○
When a character string outside the available input range is entered, an error message is displayed.

F940GOT



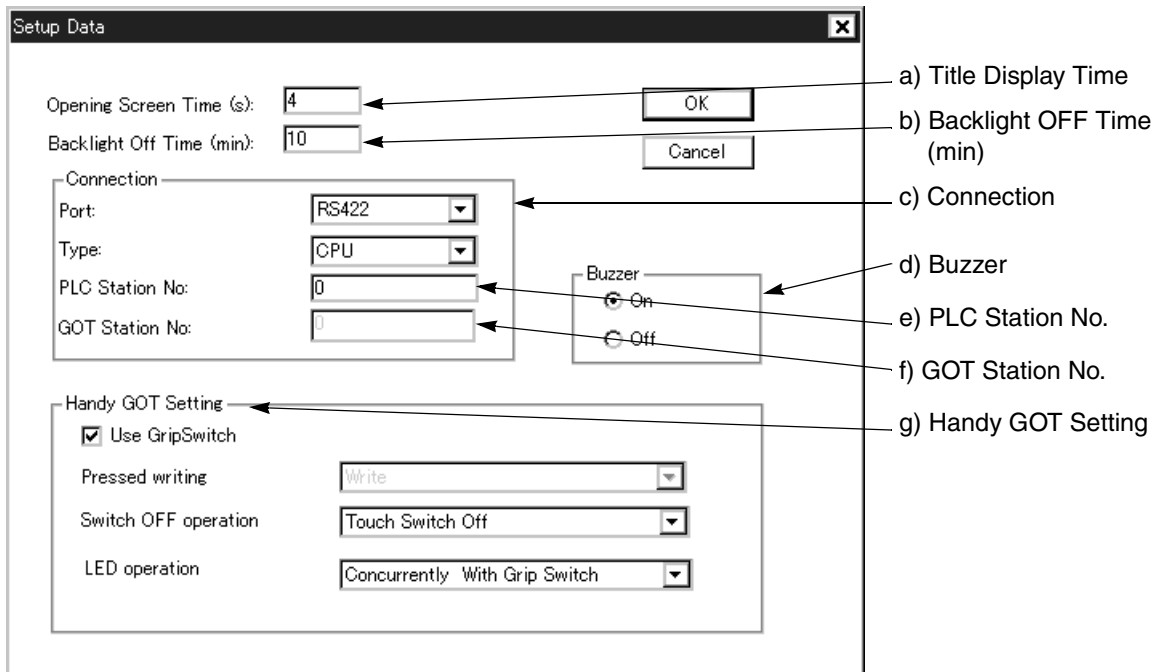
b) Entry Code

a) Entry Code

Added in Ver. 2.60 and later

- a) Entry Code
An entry code can be set using an eight-digit numeric within the range of 00000000 to 99999999 and one among 16 security levels from 0 (low) to 15 (high).
When the check mark is given to "Display Entry Code Error", an error is displayed on the GOT-F900 screen if a non-existing entry code is input by mistake (when the OS version of the GOT-F900 supports this function).
- b) Entry Code for Transfer
The screen data in the F940GOT is protected by an entry code.
If the screen data has been transferred (written) to the F940GOT by entering a four-digit numeric within the range of 0000 to 9999, input of an entry code is requested by the F940GOT when the screen data is tried to be read. When the entered entry code is equivalent to that set here, the screen data is allowed to be read.
(It is recommended to make notes of the registered entry code so that you do not forget it.)

- 5) Setup Data
 Set the 50DU-TK Series PC connection method, the buzzer sound, the backlight extinguishing time and the title display time.



- a) Title Display Time (sec) <Set range: 0 to 60>
 Set the time until the title → user screen is displayed after the power of the DU is turned on. The available set range is 0 to 60 sec.
 It is recommended to set the following value in accordance with the PC connected (when the CPU is directly connected).
 FX Series: 0 sec or 1 sec or more
 A Series: 0 sec or 4 sec or more
- b) Backlight OFF Time (min) <Set range: 1 to 99>
 Set the time after which the backlight is extinguished while the third bit of the control device is turned on and the DU is not operating. The available set range is 1 to 99 min.
- c) Connection
 The contents of setting vary depending on the PC specified by "Project Settings" as shown in the table below.

Table:6.11

✓: Can be set —: Cannot be set

	Direct connection to CPU		Linkconnection	
	RS-422	RS-232C	RS-422	RS-232C
MELSEC-FX	✓	✓*2	—	—
MELSEC-QnA,Q	✓	—	✓	✓
MELSEC-A	✓	—	✓	✓
OMRON-C	—	—	✓	✓
FUJI-N	✓	—	✓	✓
AB-SLC500	—	✓	—	—
AB-Micro Logix	—	✓	—	—
SIEMENS-S7 300	—	✓	—	—
SIEMENS-S7 200	—	✓	—	—
General-purpose communication	✓*1	✓*1	—	—
FREQROL	✓	—	—	—
FX-GM	✓	—	—	—
Matsushita-FP	—	✓	—	—

*1 In the general-purpose communication, the baud rate, etc. can be set by selecting "System Settings" and "DU Printer" in accordance with the communication specifications of the micro computer board, etc.

Ver2.0~▶

*2 The setting is valid only when the DU model is set to F940GOT.
The setting is available in the DU/WIN V2.0 and later versions.

d) Buzzer

Set whether the buzzer built in the DU is to sound or not.

When the buzzer is set to OFF

The buzzer specified by selecting "Indicator" and "Buzzer" or using the touch keys does not sound.

e) PLC Station No. ("Station No." is displayed in any version former than Ver. 2.50.)

Set the station No. set in the connected equipment (PLC).

The setting range is from 0 to 31.

(The allowable setting range is actually restricted by the connected equipment.)

Ver2.5~▶

f) GOT Station No.

This item cannot be set currently.

g) Handy GOT Setting

For the details, refer to the manual of the handy GOT.

Ver2.5~▶

i) Pressed writing

Data is written to the control bit device M+7 (the 8th bit) in accordance with the grip switch ON/OFF status.

Ver2.5~▶

ii) Switch OFF operation

Set the touch switch pressed status valid or invalid when the grip switch is set to OFF from ON.

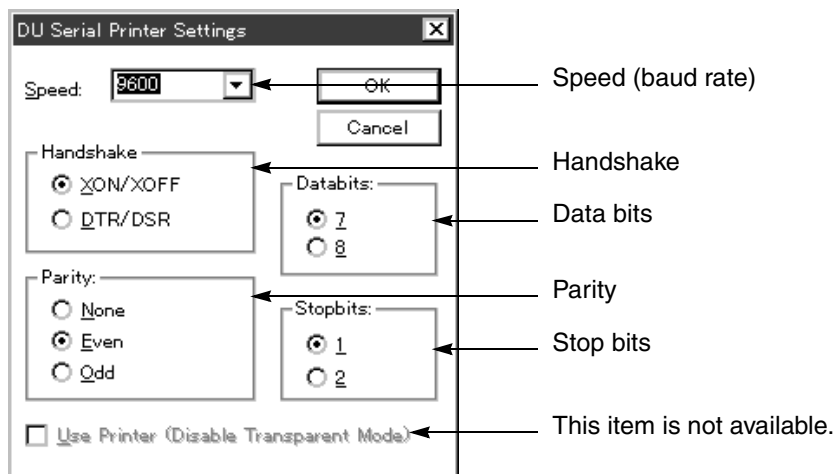
Ver2.5~▶

iii) LED operation

Select the control method for lighting of the GRIP SW LED provided on the panel face.

6) DU Printer

The data on alarm, sampling trace, etc. can be printed out using the printer connected to the DU via the serial communication (RS-232C). This item sets the serial communication.
Make sure to refer to "Note" below for the 50DU-TK.



Setting of the representative printers

(For other printers, set the required items while referring to the specifications described in the manual of the printer used.)

Table:6.12

Set item	Communication Setting ([] = Initial Value)	Printer Model Name				
		GT-10A	K6PR(-K)	A7(N)PR	ESC/P	ESC/P
Speed	[300],600,1200,2400, 4800,9600,19200	2400	2400	9600	2400	9600
Data bits	[7bit],8bit	8bit	8bit	8bit	8bit	8bit
Stop bits	[1bit],2bit	1bit	1bit	1bit	1bit	1bit
Parity	[Even], Odd Or None	Even	Even	Even	Even	Even
Handshake	[DTR/DSR],xon/xoff	DTR/DSR	DTR/DSR	DTR/DSR	DTR/DSR	DTR/DSR

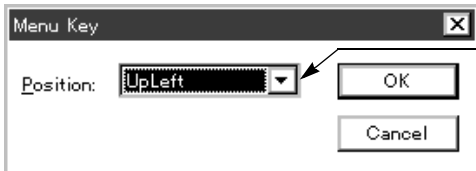
* In the printer GT-10A, set the switch (SW1-1) on the serial communication board to ON to select the general-purpose printer mode.

Ver2.2~ ▶

* The speed "19,200 bps" is supported in the DU/WIN-E V 2.2 or later.
(It is supported only in the GOT. It is not supported in the DU (50DU-TK.))

- 7) DU Menu Key
Set the position of the touch key to call the system menu of the DU.

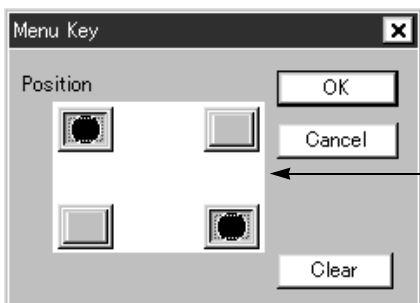
50DU-TK



Position
Select either one among "None", "UpLeft", "LowLeft", "UpRight" and "LowRight".

When turning on the power while pressing and holding the touch key set in "Position" of "DU Menu Key", the system menu of the DU is displayed.

F940GOT



Position
Select one or two among "None", "UpLeft", "LowLeft", "UpRight" and "LowRight".

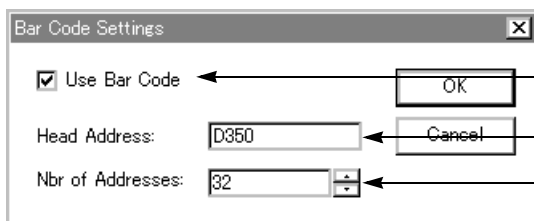
When a touch key set in "Position" on the Menu Key screen is pressed while the user screen is displayed, the main menu screen of the F940GOT is displayed.

Ver2.2~ ▶

- 8) Bar Code Settings
Set the head word device No. and the number of word devices of the PLC to which the data read by the bar code reader connected to the GOT in serial communication (RS-232C) is written.

Ver2.3~ ▶

(For the F930GOT, this item is supported in V 2.3 or later.)



a) Use Bar Code
b) Head Address
c) Nbr of Addresses

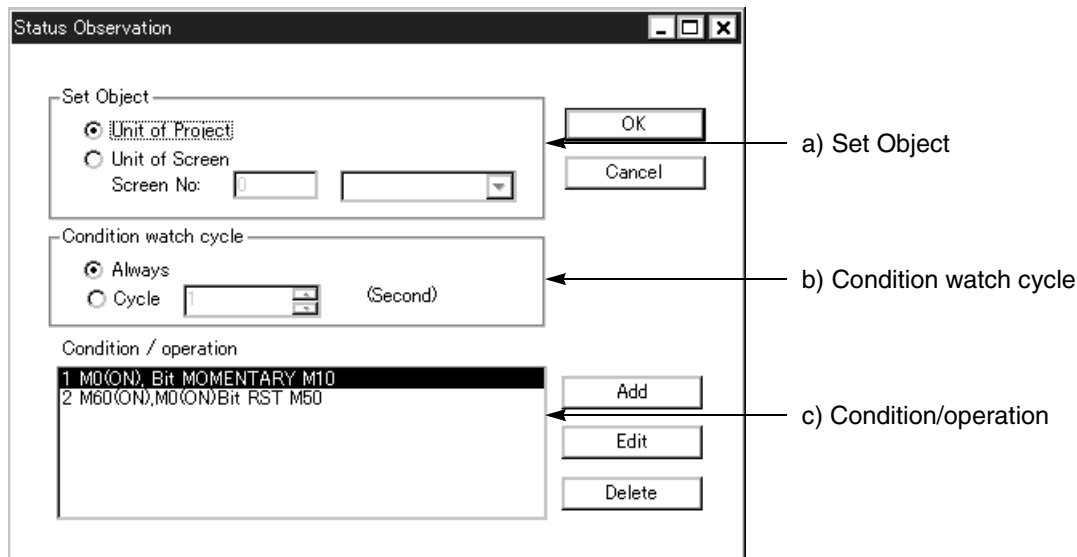
- a) Use Bar Code
Click to check the check box to connect a bar code reader.
- b) Head Address
Input the head device No. of the PLC to which the data is written.
Available word devices are only the current values in which a numeric value from 0 to FFFFH can be handled.
T, C, D -----FX Series
D, W, T, C, R, Z, V --A/QnA/Q Series
D-----General-purpose communication
D-----OMRON C Series, Siemens S7-300 Series
- c) Nbr of Addresses
Set the number of word devices (from 2 to 32) beginning with the word device No. set in "2) Head Address" to be used in communication.
Data format 1st word device = Bar code data size
2nd word device and later = Bar code data

Ver2.5 - 9) Status Observation

When the specified condition is established (that is, when the specified bit device turns ON or OFF), the bit device is set to ON/OFF and the word data is written in the PLC.

When "Unit of Project" is selected in "Set Object", writing/operation is executed when the condition is established without regard to the display screen. When "Unit of Screen" is selected in "Set Object", writing/operation is executed when the condition is established for each display screen.

When "Unit of Screen" is selected, however, the function set to the base screen only is valid.



- a) Set Object
Select "Unit of Project" or "Unit of Screen".
When selecting "Unit of Screen", select the screen No. to which the condition is set.
- b) Condition watch cycle
In accordance with the cycle set here, the system monitors whether the specified condition is established.
Always: Always monitors establishment of the condition.
Cycle: Monitors establishment of the condition in the cycle set here.
The setting range is from 1 to 60 sec (unit: 1 sec).
- c) Condition/operation
The contents of the added or edited "Condition/operation" are displayed in the list.
Up to 40 types of contents can be set for each of "Unit of Project" and "Unit of Screen".
In the case of "Unit of Screen", 40 types of contents can be set for each screen.

Add
Displays the "Setting of condition and operation" screen, and newly adds the setting of "Condition/operation".

Edit
Displays the "Setting of condition and operation" screen, and displays the setting of "Condition/operation".

Delete
Deletes the contents of setting in the cursor position in the "Condition/operation" list.

"Setting of condition and operation" screen

- a) **Condition**
Set the condition to execute writing/operation.
Only bit devices can be set here.
"Bit Device 1" should be set in any case.
"Bit Device 2" can be set if necessary. When setting "Bit Device 2", check the check box.
"ON" and "OFF" function as the trigger for the device specified by "Bit Device 1/2". Select "ON" or "OFF".
- b) **Operation Setting**
Set the operation to be executed when the specified condition is established.
- i) **Operation**
Among the following types of write operations, only one type can be set for one condition.
Only while the condition is established, a bit device is ON (Bit MOMENTARY).
- A bit device is set to ON (Bit SET).
- A bit device is set to OFF (Bit RST).
- The current status of a bit device is reversed (ON → OFF or OFF → ON) (Bit ALT).
- Data is written to a word device (Data SET 16bit).
- Data is written to a word device (Data SET 32bit).
- ii) **Writing Element**
Set the device which operates when the condition is established.
- iii) **Point**
Set the number of "Writing Elements".
The following number of points can be set.
- Bit device: 1 to 40 points
- Signed or unsigned 16-bit device: 1 to 20 points
- Signed or unsigned 32-bit device: 1 to 10 points
- iv) **Fixed Value**
Set the fixed value to be written to "Writing Element".
This item can be set when "Operation" is set to "Data SET 16/32bit".
- v) **Indirect Word Device**
"Fixed Value" added by the current value of "Indirect Word Device" is written to "Writing Element".
This item can be set when "Operation" is set to "Data SET 16/32bit".
When setting this item, check the check box.
- vi) **Word transfer mode (FMOV or BMOV)**
When "Operation" is set to "Data SET 16/32bit", two or more points are set to "Point", and the current value of "Indirect Word Device" added by "Fixed Value" is written to "Writing Element", the following setting is available.

FMOV:

The current value of "Indirect Word Device" added by "Fixed Value" is written to two or more "Writing Elements". Only one "Indirect Word Device" is required.

Example:

When "Writing Element" is set to "D10", "Point" is set to "3", "Indirect Word Device" is set to "D100" and "Fixed Value" is set to "20", the data is written as follows:

D10 → D100 + 20
 D11 → D100 + 20
 D12 → D100 + 20

BMOV:

The current value of each "Indirect Word Device" added by "Fixed Value" is written to each corresponding "Writing Element". "Indirect Word Devices" as many as the number of "Writing Elements" are required.

Example:

When "Writing Element" is set to "D10", "Point" is set to "3", "Indirect Word Device" is set to "D100" (, three indirect word devices are set,) and "Fixed Value" is set to "20", the data is written as follows:

D10 → D100 + 20
 D11 → D101 + 20
 D12 → D102 + 20

10) Color Settings (valid only in the F940WGOT)

When selecting the color of each object, the color pallet consisting of basic 16 colors and selected 16 colors is displayed.

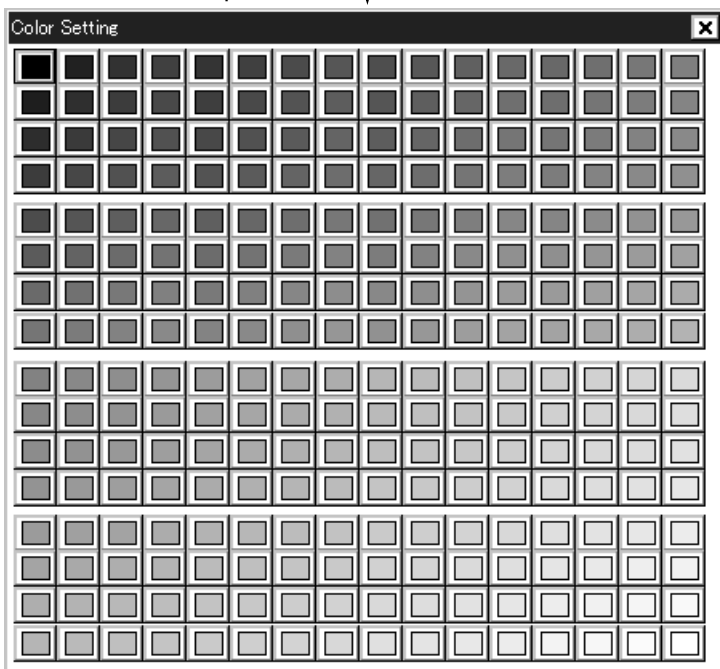
In "Color Settings", select and register 16 colors which will be often used from available 256 colors. (The basic 16 colors cannot be changed.)

Selected color pallet



When a place to be registered is clicked, the 256-color selection pallet appears as shown below.

256-color selection pallet



**To perform the setting equivalent to 6) DU Printer**

This setting can be performed in serial communication in the operation environment setting (offered when the power is turned on while the upper left corner of the screen is pressed and held) in the DU or the GOT.

☞ For the details, refer to the operation manual of the DU.

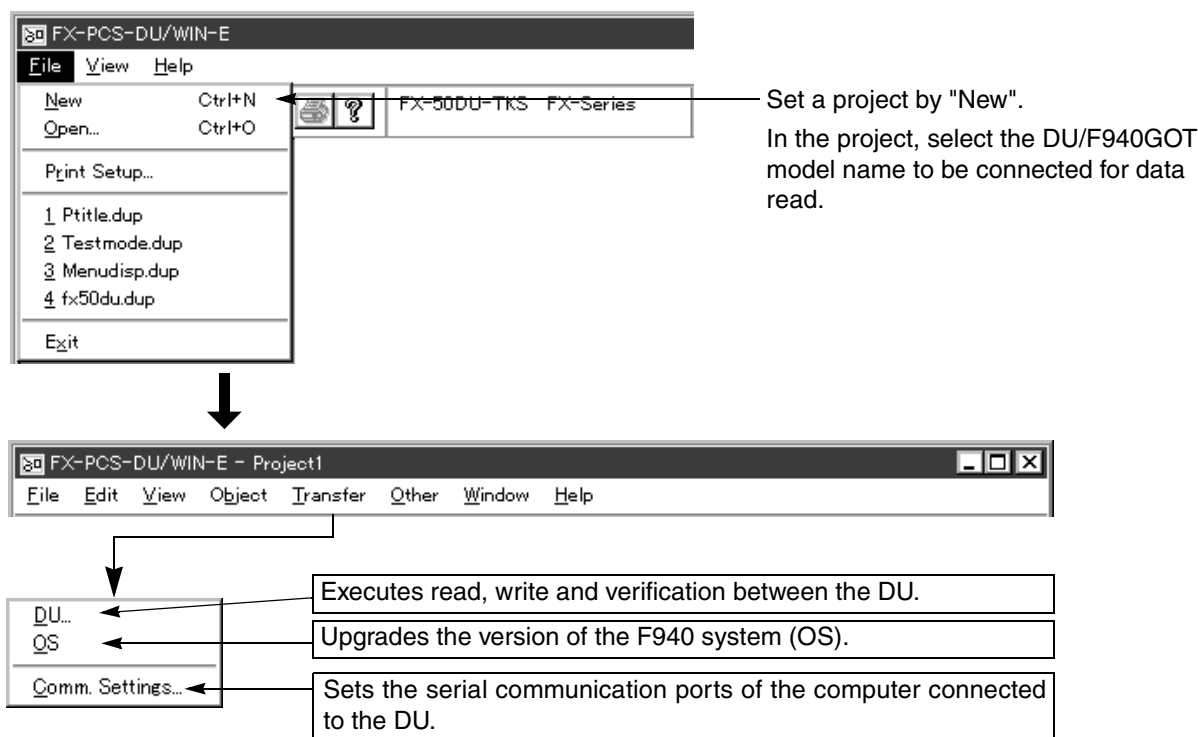
When this setting is performed, the RS-232C communication connector of the DU is changed over to the printer connection mode, and communication between the built-in 2-port interface and the personal computer is disabled. Perform this setting after debugging the PC program.

6.5 Jobs offered by the “Transfer” command

Between the personal computer and the DU, the screen data created by the DU/WIN software can be read and written, and the data sampled by the DU and the alarm history can be read.

The serial communication (RS-232C interface) ports of the personal computer connected to the DU can be set.

When the basic screen is displayed by startup of the DU/WIN software, "Transfer", "Edit", etc. are not displayed on the menu bar.



Data treated by the transfer function

Table:6.13

Data type	Personal computer DU			Description
	Read	Write	Verify	
Parameter	✓	✓	✓	DU model, printer communication setting, control device, etc.
Data file	✓	✓	✓	Two or more data strings set using arbitrary numerics and transferred from the computer to the DU by key operations on the DU
Comment	✓	✓	✓	Comment data for each device used in the DU monitor mode
DU screen data	✓	✓	✓	Screen data in which objects such as characters, indicators, numerics, etc. are set and drawn
Sampling result	✓	—	—	Values of data registers in the PC received by the DU in the specified condition
Document footer	✓	✓	✓	Printed as footer when the DU screen data is printed
Alarm history	✓	—	—	Alarm occurrence history data acquired by the DU
Alarm frequency	✓	—	—	Data on number of times of occurrences of alarms for each alarm type acquired by the DU
External character data *1	✓	✓	✓	External character data such as logos, etc. created by the external character function

✓: Transfer enabled —: Transfer disabled

*1 This function is not provided in the FX-PCS-DU/WIN-E (English version). It is dedicated to the FX-PCS-DU/WIN (Japanese version.)



Data types which can be actually selected

Data selected to be transferred between the personal computer and the DU is DU screen data, sampling result, alarm history and alarm frequency. Parameters, comments, document footer and external character data are contained in the DU screen data.

6.5.1 Preparation for data transfer between the DU

The drawing data is transferred to the DU main body or the PC (program area) depending on the DU type. Refer to the description on each DU type.

This paragraph describes roughly the operating procedure of each DU for reference. (For the details, refer to "Personal computer transfer mode" in the operation manual.)

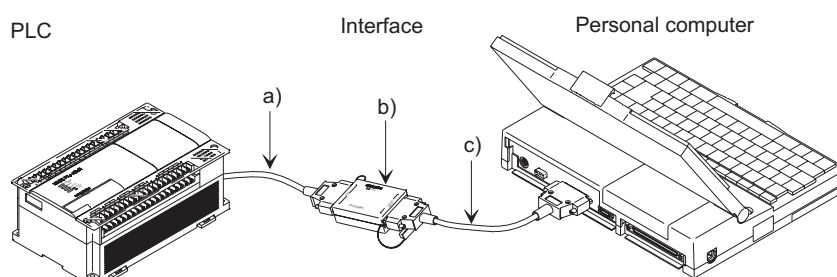
Table:6.14

Classification	DU type
Data is transferred to the memory in the PLC.	10DU
Data is transferred to the memory in the DU main body.	25DU,30DU,40DU,40DU-TK,50DU-TK,F940GOT

10DU

DU in which data is transferred to the PLC

- 1) Connect the personal computer and the PLC.
It is equivalent to the case of software for sequence programs.



- a) Data transfer cable
 - FX₀N, FX₁S*₁, FX₁N*₁, FX₂N, FX₂NC Series
FX-422CAB0
 - FX, FX₂C Series
FX-422CAB
 - *₁ Ver 2.8 or later
Applicable to the FX₁S and FX₁N Series PLCs.
(Applicable to 10DU ver 3.10 or later, or 10DU produced after Jan. 2003)
 - b) RS-232C/RS-422 conversion interface
FX-422AW or FX-422AWC
 - c) Data transfer cable
F₂-232CAB (Connector on the personal computer: Dsub 25-pin)
F₂-232CAB-1 (Connector on the personal computer: Dsub 9-pin)
- 2) Change over the PLC to the STOP mode.
For the RUN mode (operation) and the STOP (stop) mode in the PLC and the cautions, refer to the handy manual of the PLC used.
 - 3) Manipulate the DU/WIN software.
Transfer data between the PLC and the personal computer using the "DU" command on the "Transfer" menu of this software.

Data transfer is performed using PLC program or memory for file register.

Make sure to back up PLC program in the program memory and data in the file register because it is cleared when data transfer is performed.

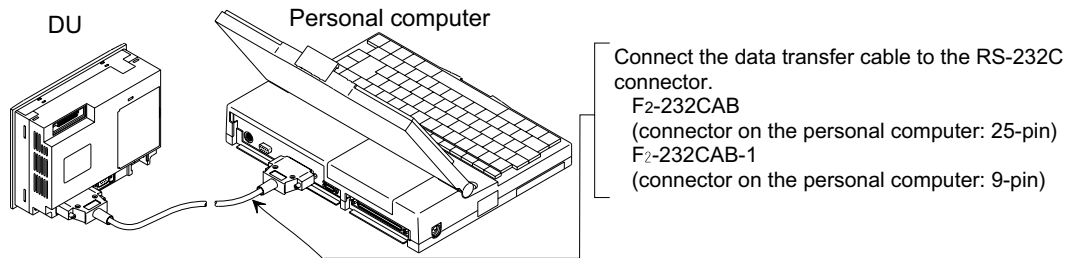
☞ For the operating procedure, refer to "6.5.3 Executing transfer of the drawing data".

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

DU in which data is transferred to the DU

Before starting data transfer between the DU, set the DU to the wait status in the personal computer transfer mode (in which data transfer is enabled). (In the 25DU, the screen data transfer mode is offered instead.) The operating procedure in each DU is described briefly below. (For the details, refer to description on the personal computer transfer mode in the DU operation manual.) The procedure below is required to change over the data transfer function between the DU and the personal computer and the printout function.

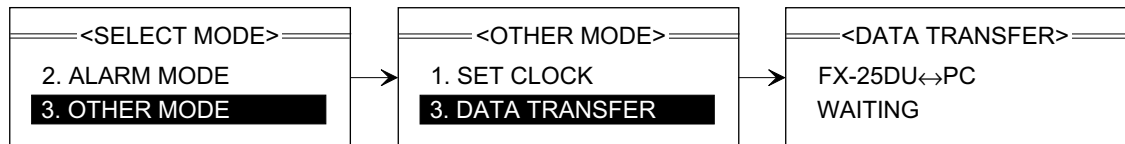
- 1) Connect the personal computer and the DU.
Connect them via the RS-232C interface.



- 2) Change over the DU to the personal computer transfer mode.
(The operating procedure varies depending on the DU.)

25DU

In the setting performed at shipment from the factory, the mode selection screen is displayed when the power is turned on.



Select "3. Other mode" using the [F1] or [F2] key, and press the [F5] key to execute selection.

Select "3. Screen data" using the [F1] or [F2] key, and press the [F5] key to execute selection.

"Wait for data transfer" is displayed.

☞ When the mode selection screen is not displayed

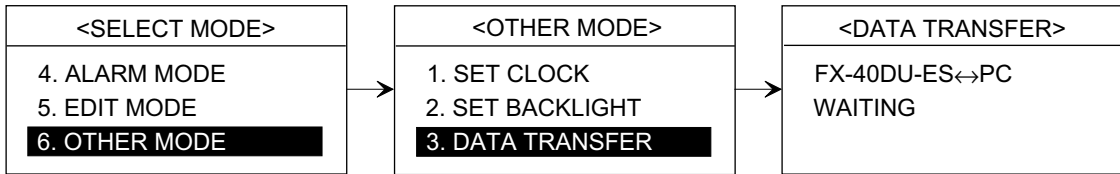
Turn on the power while pressing and holding the [F3] key so that the operation environment set screen is displayed.

On this screen, the use mode is set to "Screen mode". Select "All modes".

30DU, 40DU and 40DU-TK

In the setting performed at shipment from the factory, the mode selection screen is displayed when the power is turned on.

* In the FX-40DU-TK-E, touch the screen directly for operation.



Select "3. Personal computer transfer" using the ▲ or ▼ key, and press the [Enter] key to execute selection.

Select "6. Other mode" using the ▲ or ▼ key, and press the [Enter] key to execute selection.

"Wait for data transfer" is displayed.

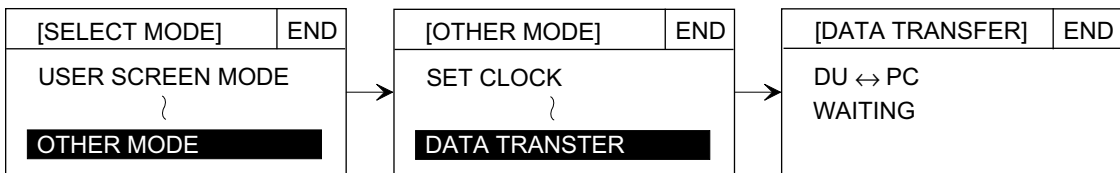
☞ When the mode selection screen is not displayed

Change the setting of the DIP switch provided under the cover on the rear face of the DU, then turn on the power.

(DIP switch: SW1 = OFF, SW2 = OFF)

50DU

In the setting performed at shipment from the factory, the system menu is displayed when the upper left corner is pressed.



Press "Other mode".

Press "Personal computer transfer".

"Wait for data transfer" is displayed.

☞ When the mode selection screen is not displayed

Turn on the power of the DU. When the title screen is displayed, press the upper left corner to display the language set screen.

LANGUAGE → Press "End" → Operation Environment Set → "Exit" → Mode Select

3) Manipulate the DU/WIN software.

To transfer data between the PC and the personal computer, use the "DU" command on the "Transfer" menu of this software.

☞ For the operating procedure, refer to "6.5.3 Executing transfer of the drawing data".

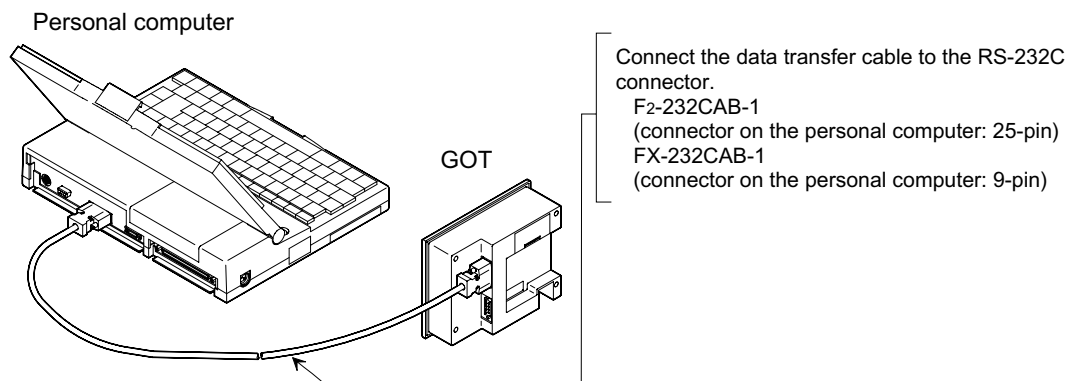
F940GOT

Group which transfers data to the F940GOT

The F940GOT does not have to be set to the wait status in the personal computer transfer mode (in which data transfer is enabled) before data transfer between the F940GOT is started. Data can be transferred to the F940GOT while the user screen is displayed.

When the screen data is transferred while the user screen is displayed, the transfer mode is automatically selected. Or data can be transferred after the step 2) below.

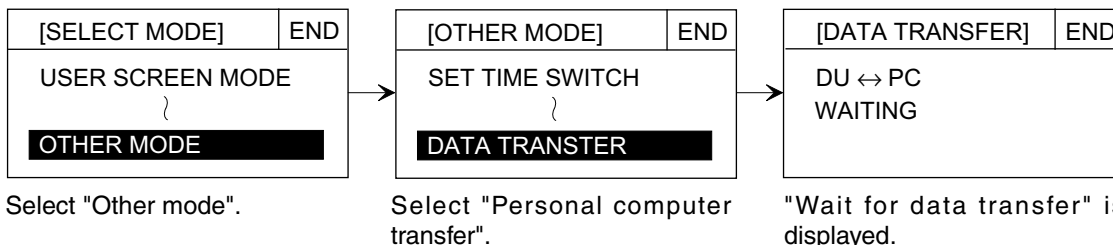
- 1) Connect the personal computer and the F940GOT.
Connect them via the RS-232C interface.



- 2) Change over the F940GOT to the personal computer transfer mode.
(Transfer is enabled even if the F940GOT is not changed over to this mode.)

F940GOT

In the setting performed at shipment from the factory, the Mode Select screen is displayed when the power is turned on.



- ☞ When the Mode Select screen is not displayed

Turn on the power. When the upper left corner of the screen is clicked while the title screen is displayed, the LANGUAGE set screen is displayed.

LANGUAGE screen → Click the End button. → Operation Environment Set screen →

Click the Exit button. → Mode Select menu

- 3) Manipulate the DU/WIN software
To transfer the data between the PC and the personal computer, use the "DU" command on the "Transfer" menu of this software.
☞ For the operating procedure, refer to "6.5.3 Executing transfer of the drawing data".



The data transfer cable is different between the DU and the F940GOT.

Have in mind that the model name of the data transfer cable is different between the F940GOT and the DU because the RS-232C connector is the Dsub 9-pin type in the F940GOT and the Dsub 25-pin type in the DU.

6.5.2 Executing transfer of the drawing data

The “DU” command allows to write the data saved in the memory in the personal computer to the DU and read the data saved in the DU to the personal computer. When the DU type is “FX-10DU-E”, regard “DU” as “PC” in the description below.

10DU, 20DU, 30DU, 40DU, 40DU-TK, 50DU-TK

1) Progress in data transfer
 2) Transfer status
 3) Project check before write
 4) DU read option

F940GOT

1) Progress in data transfer
 2) Transfer status
 3) Send Options
 4) Receive Options
 5) Send Options
 6) Test Project After Receive

[Write]

Transfers the screen data saved in the memory in the personal computer to the DU or the F940GOT. Have in mind that the memory in the DU or the F940GOT is overwritten when this button is clicked.

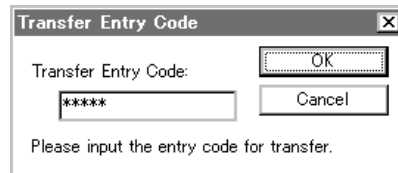
[Read]

Transfers the screen data, the sampling result, the alarm history and the alarm frequency saved in the memory built in the DU to the personal computer.

Have in mind that the data saved in the memory in the personal computer is overwritten when this button is clicked.

F940GOT

When read is executed, the following dialog box is open to prompt you to enter an entry code.



When an entry code you have entered is equivalent to the entry code registered in "View"- "System Settings"- "Entry Code"- "Entry Code for Transfer", data can be read.

If the entry code for transfer has not been registered, press the [Enter] key without entering any entry code.

[Verify]

Verifies the memory in the DU against the screen data saved in the memory in the personal computer. The data saved in the memory in the DU and the personal computer are not changed at all by verification.

[Cancel]

Aborts execution of transfer.

Click this button when it takes considerable time for transfer (when the bar graph of "1) Progress in data transfer" proceeds very slowly).

[Communication Set]

Changes over to the serial communication (RS-232C interface) port in the personal computer connected to the DU.

☞ For the details, refer to "6.5.4 Changing over the port for communication setup".

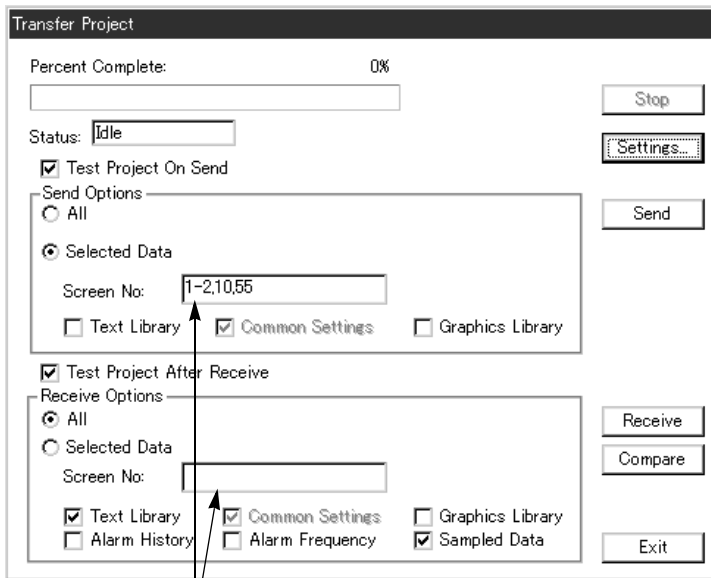
Description on the display contents and the entry area

- 1) Progress in data transfer
Indicates the progress in data transfer as the bar graph.
The progress in transfer can be seen because the graph becomes longer as the data capacity transferred increases.
- 2) Transfer status
Indicates the transfer status by displaying "Writing", "Reading", "Verifying" or "Waiting".
- 3) Send Options
Sets whether or not correctness of the screen data created is checked before it is transferred (written) to the DU.
To perform the screen data check, click this item to display the check mark "✓" to the check box.
☞ The contents of this check are equivalent to those of the check offered by "Other"- "Project Check" on the tool menu.
- 4) Receive Options
Among the screen data saved in the memory built in the DU, the data acquired by sampling and the alarm data (history and frequency) saved in the alarm setting, the data selected exclusively can be read to the personal computer.
Click the data to be read among "Screen data", "Sampling result", "Alarm history" and "Alarm frequency" so that the check mark "✓" is displayed in the check box, then click the Read button.
In the F940GOT, all of the user screens (all of them at a time) or the specified range of the specified user screens can be read. For the screen No. specification procedure, refer to (i) below.
- 5) Send Options
The screen data, the text library, the image library, etc. created using the DU/WIN software (personal computer) can be written to the DU or the F940GOT.
In any unit other than the F940GOT, all data is written at a time. In the F940GOT, all of the user screens (all of them at a time) or the specified range of the specified user screens can be written.
For the screen No. specification procedure, refer to (i) below
- 6) Test Project After Receive ☞ Paragraph 5.2.2
Sets whether or not correctness of the screen data created is checked after it is transferred (read) to the DU.
To perform the screen data check, click this item using the mouse to display the check mark " " to the check box.
☞ The contents of this check are equivalent to those of the check offered by selection of "Other" and "Project Check" on the tool menu.



Range specification procedure for partial screen transfer in the F940GOT

- In "4) DU read option" and "5) DU write option", add " " to the radio button "Specified Range" and enter desired screen Nos. to "Screen No." The figure below shows an example of specification of the screen range to be transferred.



Enter the screen Nos. here.

- a) When specifying only one screen

Enter the screen No. to be transferred using half-width numerics. In this case, the screen No. 20 only will be transferred.

- b) When specifying two or more screens one by one

Enter the screen Nos. to be transferred using half-width numerics. Enter a comma (,) between the screen Nos. In this case, the screen Nos. 10, 11, 20 and 25 (four screens in all) will be transferred.

- c) When specifying consecutive two or more screens

Enter the screen Nos. to be transferred using half-width numerics. Enter a hyphen (-) between the screen Nos. In this case, the screen Nos. 5 to 25 will be transferred.

When partial transfer (write) of screens is performed, space is generated in the screen data memory in the F940GOT.

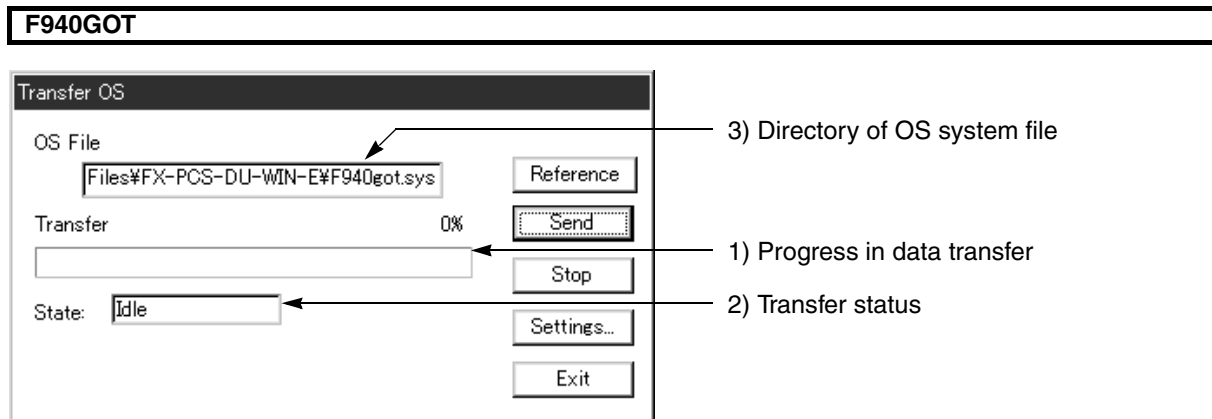
When partial transfer is performed repeatedly, much space is generated and the available memory capacity is decreasing.

It is recommended to perform entire transfer when creating screens.

6.5.3 OS transfer function in the F940GOT

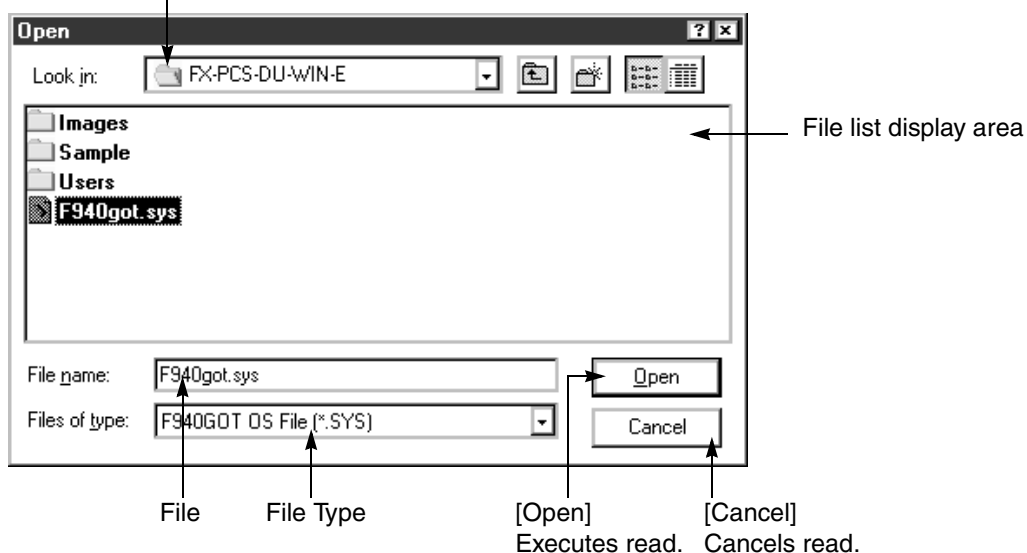
By using the "OS" command, the system program of the F940GOT can be written. At the time of shipment from factory, the system program is already transferred. So this procedure is not required.

This function is offered for upgrade of the F940GOT in the future.



[Refer] Specify the disk directory in which the OS (operating system) is located. When the Refer button is clicked, the Open File dialog box is open as follows.

Select the directory or the drive name to be displayed in the list.



Description on the input areas and the buttons

- File Enter the file name to be read from the keyboard. Or click a desired file name in the file list.
- File Type An extender (*.SYS) indicating the OS file is displayed. Any other type cannot be selected.

- [Write] Executes write by transferring the OS file specified using the Refer button to the F940GOT.
- [Settings] Allows to select the RS-232C communication port and the communication speed (baud rate) of the personal computer.

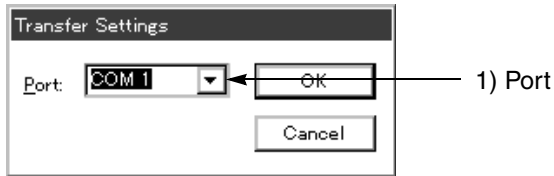
Description on the display contents and the input areas

- 1) Progress in data transfer
Indicates the progress in data transfer as the bar graph.
The progress in transfer can be seen because the graph becomes longer as the data capacity transferred increases.
- 2) Transfer status
Indicates the transfer status by displaying "Writing", "Reading", "Verifying" or "Waiting".
- 3) Directory of OS system file
Indicates the OS file name to be written to the DU.

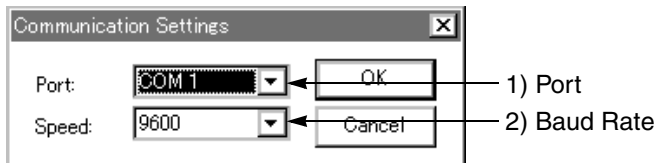
6.5.4 Changing over the port for communication setup

The “Communication Setup” command allows to select one among the port Nos. assigned to the serial communication connectors in the personal computer connected to the DU.
 If the port No. of the serial communication connector connected to the DU is not equivalent to the setting, an error occurs and transfer is disabled.

10DU, 25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT



[OK] Saves the modification entered (current setting), and closes the dialog box.

[Cancel] Cancels the modification entered, and closes the dialog box.

Description on the entry area

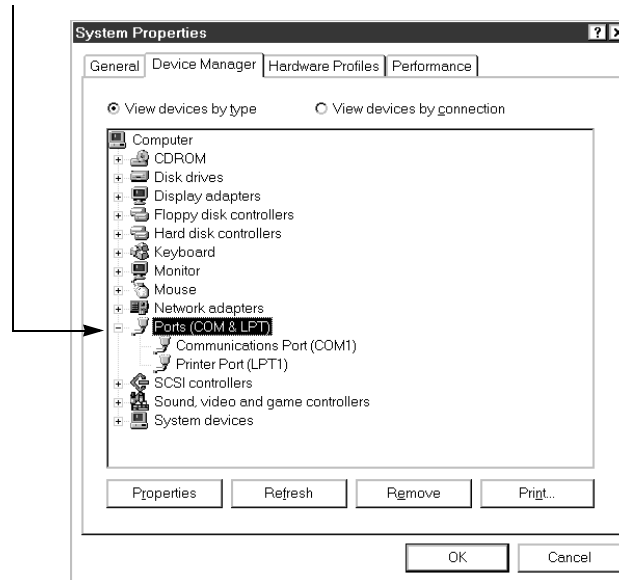
- 1) Port
 When two or more serial communication (RS-232C interface) ports (COM) are provided as standard in the personal computer, the port No. to be connected to the DU should be selected here. Click the drop-down type port button, and select one among COM1 to COM4.
- 2) Baud Rate
 Sets the communication speed (baud rate) between the F940GOT and the personal computer to the speed available in the personal computer.
 Available speeds are 9,600, 19,200 and 38,400 bps.



How to check the port Nos. supported in the Windows

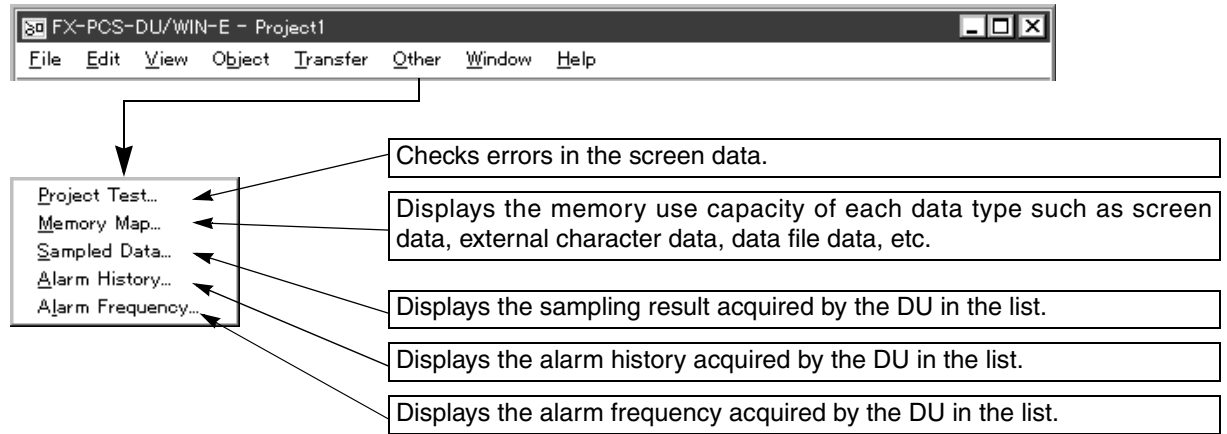
The port Nos. can be checked using the device manager on the system property window of the Windows.

- 1) Select "Start", "Settings" and "Control Panel" of the Windows. The window is opened.
- 2) Click the "system" icon.
- 3) The system property window is opened.
- 4) Click the device manager to open the device list.
- 5) When the port (COM&LPT) is clicked, the details are displayed.



6.6 Objects offered by the “Other” command

The DU screen data created can be checked. The memory use status for each data type as well as the sampling result, the alarm history and the alarm frequency acquired by the DU and read by the transfer function can be displayed in the list.



6.6.1 Error check for the screen data

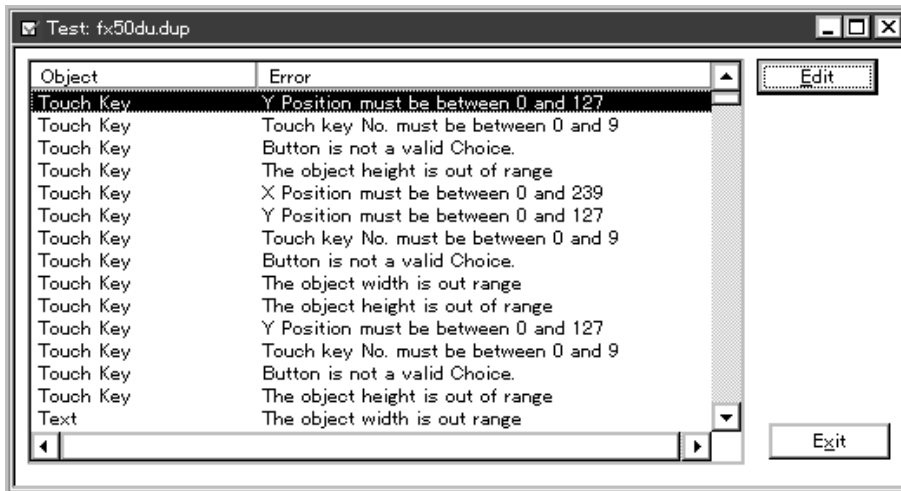
The “Project Check” command allows to check whether or not object setting errors are present in the DU screen data newly created and the existing screen data modified.

It is recommended to check errors before the screen data is written to the DU or after the screen data is read from the DU.

- When no errors are detected
When the check is completed, the dialog box shown on the under is displayed.



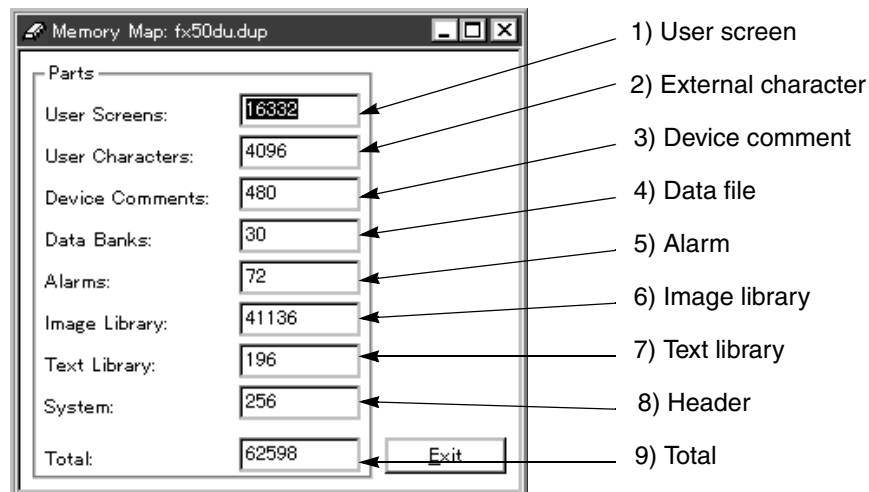
- Modifications of the setting by which errors are often generated
When the items offered by selecting “View”, “System Settings“ and “Project settings“ are modified, the error message dialog box is displayed due to the following reasons. If the setting has been modified incorrectly, return it to the original status so that the error status is cleared.
For the details, refer to "9.3 Cautions on using the screen data for an other type of PLC".
- 1) When the DU type is modified
If unavailable objects are present or if some objects cannot be displayed on the screen because the DU screen size is changed, the color of the entire background of the screen data window is changed into gray.
 - 2) When the PC connected is modified
If there are devices or ranges which cannot be set by the PC selected newly, the error object list is display so that error objects can be edited.



6.6.2 Displaying the memory use capacity

The “Memory Map” command allows to display the memory use capacity for each data type such as user screen data, data file data, device comment data, etc. and the total memory use capacity.

When two or more projects (screen data files) are read, the memory use capacities are displayed for the project on the active window.



[Exit] Closes and terminates the memory map window.

Description on the display contents

- 1) User screen
Memory capacity used for the user screens
- 2) External character
Memory use capacity of all the characters including logos and symbols created by selecting “View” and “External Character”
- 3) Device comment
Memory use capacity of all the comments created by selecting “View” and “Device Comments”.
- 4) Data file
Memory use capacity of all the data created by selecting “View” and “Data Banks. . .”
- 5) Alarm
Memory use capacity of all the alarm messages created by selecting “View” and “Alarms”
- 6) Image library
Memory use capacity of all the graphics created by selecting “View” and “Image Library”
- 7) Text library
Memory use capacity of all the character strings created by selecting “View” and “Text Library”
- 8) Header
Memory capacity used for the system information storage area offered by "View"- "System Settings", etc.
- 9) Total
Total memory use capacity of the data 1) to 8) above



Available memory capacity in each DU

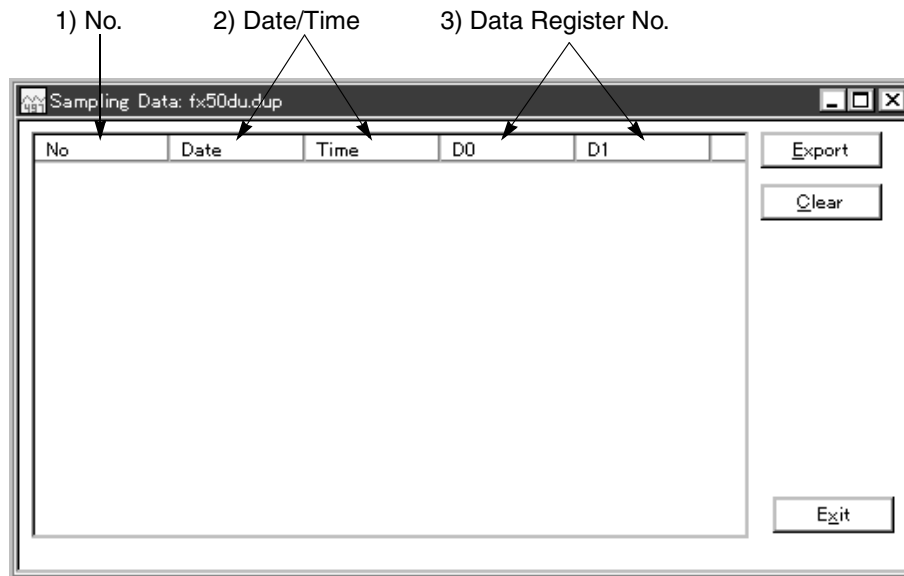
The memory capacity available for each data type varies depending on the DU type. For the details, refer to the operation manual of the DU used.

6.6.3 Displaying the sampling result

The “Sampling Result” command allows to read to and display in the personal computer the data acquired by the DU and saved in the data registers in the PC in the condition set by selecting “View” and “Data Sampler”.

The sampling result is required to be read preliminarily from the DU using the “DU” command offered on the “Transfer” menu.

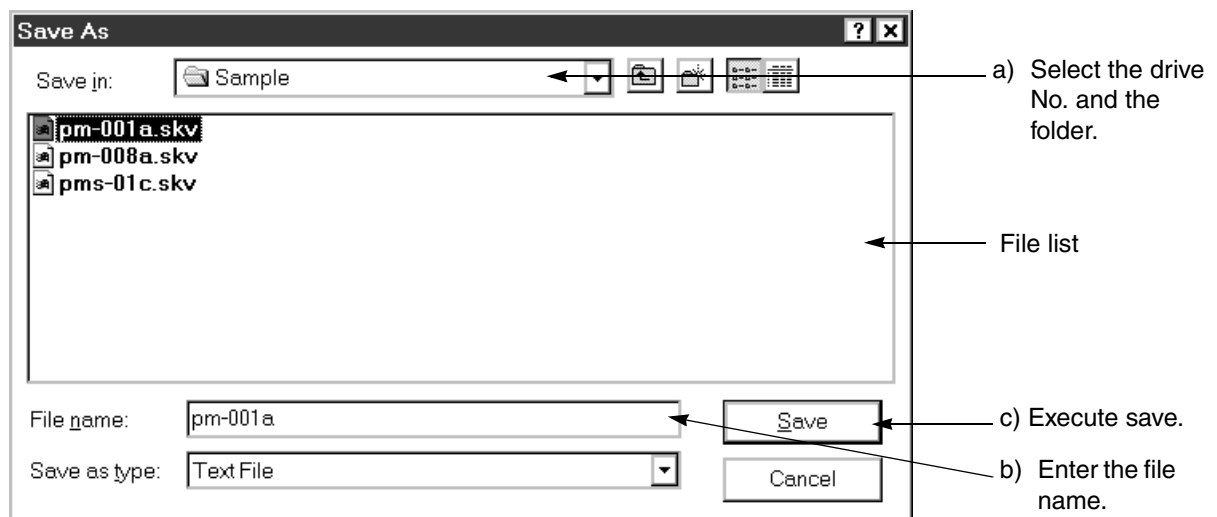
Sampling result window



[Export] Saves the sampling data to a file in the text format together with commas and space inserted to delimit each data.

The saved file can be read by the spreadsheet software (general Windows application software) and processed into graphs and tables.

Save File As window



- a) Select the drive No. and the folder to be saved.
- b) Enter the file name from the keyboard. To overwrite an existing file, select it from the file list. (The extender of the file is “SKV”.)
- c) Click the [Save] button. (This button is disabled if the file name is not entered.)

[Exit] Closes and terminates the sampling result window.

- 1) No.
Displays the consecutive Nos. assigned to the data registers in the PC in the order of sampling.
- 2) Date/Time
Displays the date and time of the calendar built in the DU at the time sampling was performed in the specified condition.
- 3) Data Register No.
Displays the data register No. sampled from the PC and its current data.



Displaying graphs using a general spreadsheet application

In the exported text files (extender: SKV), comma and space are inserted to delimit each data.

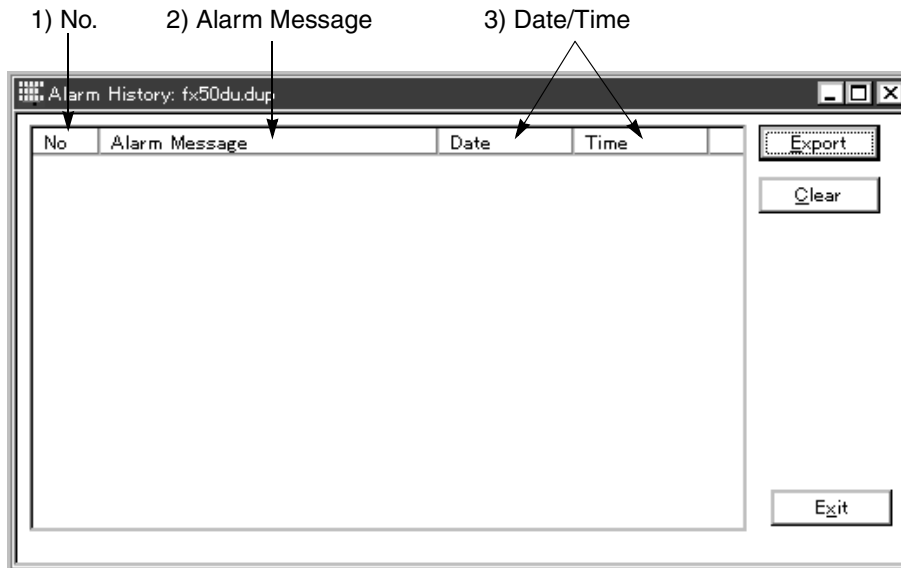
The exported text files can be read by a general spreadsheet application of the Windows, and tables and graphs created using the data read can be displayed.

6.6.4 Displaying the alarm history

The "Alarm History" command allows to read to and display in the personal computer the date and time saved in the DU as history at which the bit devices in the PC assigned to the alarm message for the contents set by selecting "View" and "Alarms" were turned on.

The alarm history is required to be preliminarily read from the DU using the "Transfer"- "DU" command.

Alarm history window



[Export] Saves the alarm history data saved in the DU as a file in the text format together with commas and space inserted to delimit each data.
The saved file can be read by the spreadsheet software (general Windows application software), processed into graphs and tables, and displayed.

[Exit] Closes and terminates the alarm history window.

1) No.

Displays the consecutive numbers assigned to the bit devices assigned to the alarm messages in the order of being turned on and saved in the DU.

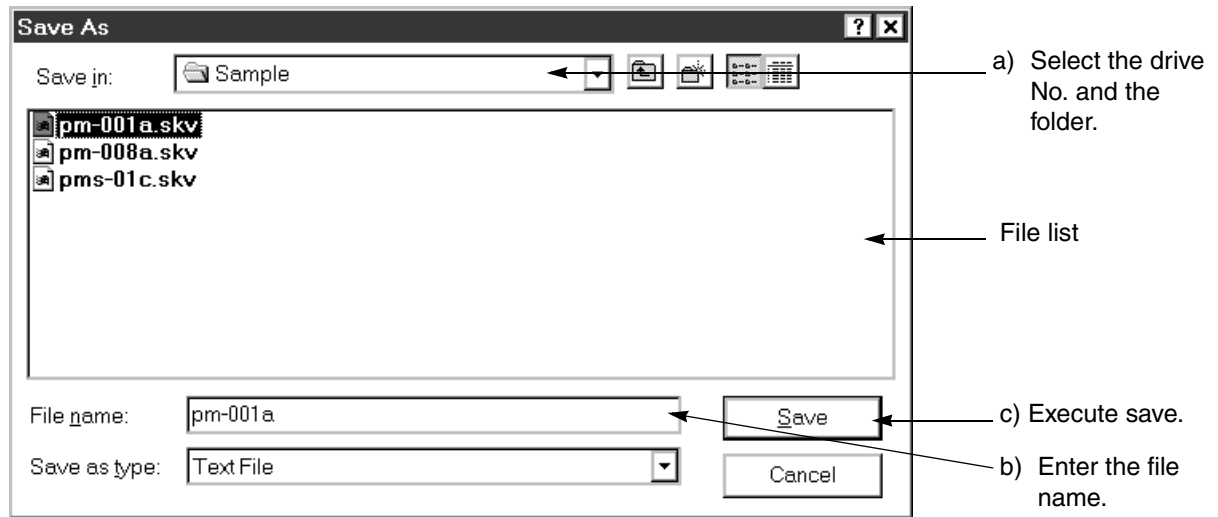
2) Alarm message

Displays the alarm message corresponding to the bit device in the PC saved in the DU.

3) Date/Time

Displays the date and time of the calendar built in the DU at the time the contents set by the alarm setting were saved.

Save Window As window



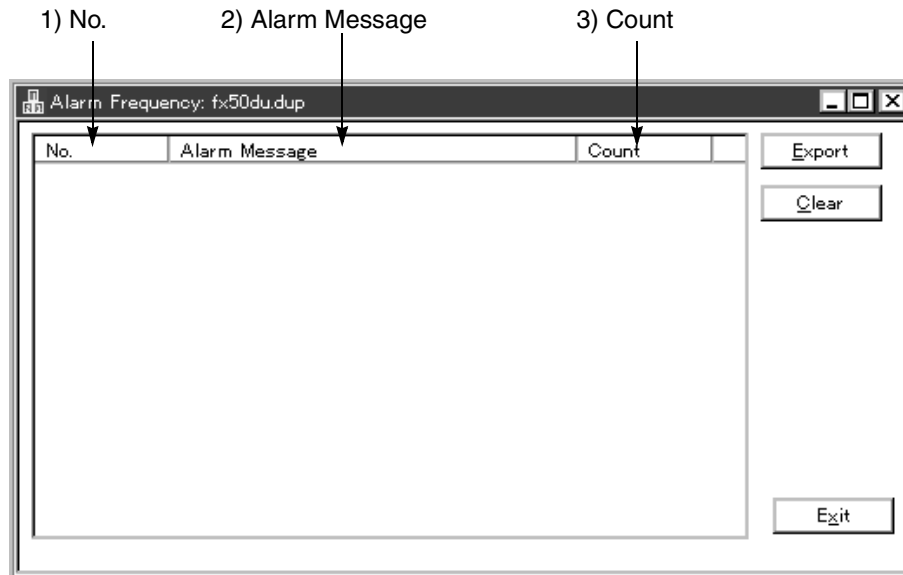
- a) Select the drive No. and the folder to be saved.
- b) Enter the file name from the keyboard. To overwrite an existing file, select it from the file list. (The extender of the file is "SKV.")
- c) Click the [Save] button. (This button is disabled if the file name is not entered.)

6.6.5 Displaying the alarm frequency

The "Alarm Frequency" command allows to read to the personal computer and display on the data on the number of times bit devices in the PC assigned to alarm messages are turned on for the contents set in "Alarm" in "View".

The alarm frequency is required to be preliminarily read from the DU using the "Transfer"-"DU" command.

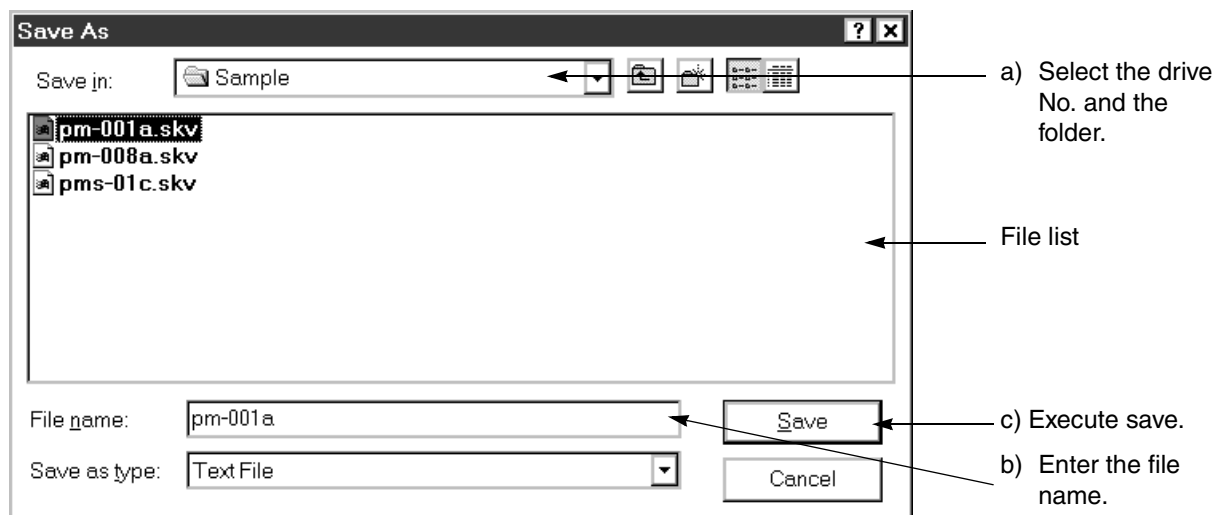
Alarm frequency window



[Export] Saves the alarm frequency data stored in the DU to a file in the text format in which comma and space are inserted between each piece of data.
A saved file can be read by a spreadsheet software (general Windows application software), processed into graphs and tables, and displayed on the screen.

[Exit] Closes and terminates the alarm frequency window.

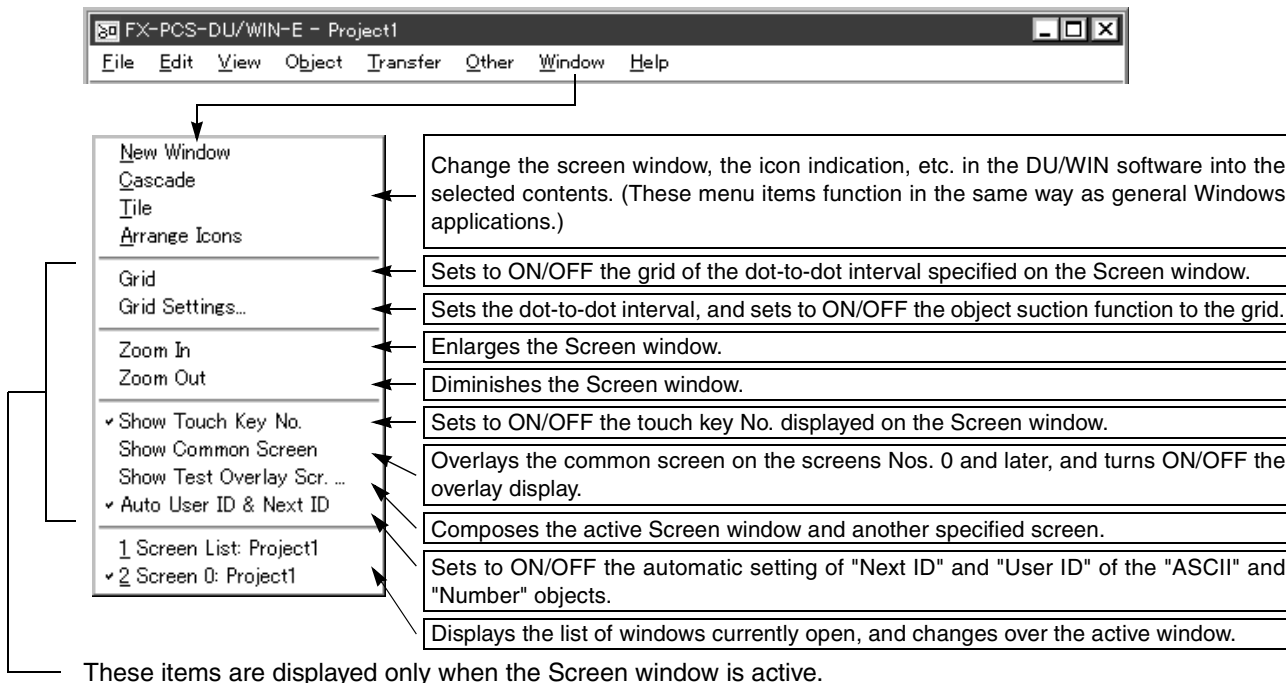
- 1) No.
Order in which devices assigned to alarm messages are turned on and saved in the DU
- 2) Alarm Message
Alarm message corresponding to a bit device in the PC which is turned on and saved in the DU
- 3) Count
Number of times by which a bit device in the PC corresponding to the alarm message is turned on

Save Window As window

- a) Select the drive No. and the folder to be saved.
- b) Enter the file name from the keyboard. To overwrite an existing file, select it from the file list. (The extender of the file is "SKV.")
- c) Click the [Save] button. (This button is disabled if the file name is not entered.)

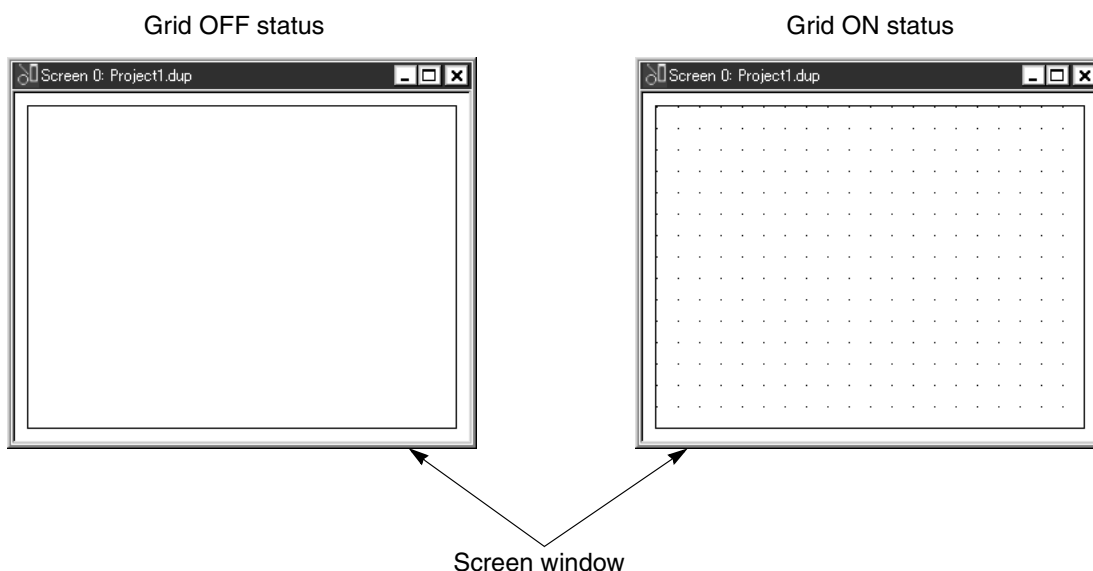
6.7 Functions offered by the Window menu

By using the Window menu, the display method during drawing such as the window layout, the grid ON/OFF status and overlay can be set.



6.7.1 Displaying the grid

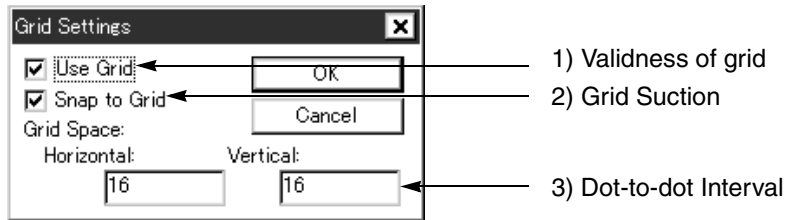
The grid (dots) of the specified dot-to-dot interval can be displayed on the Screen window. When "Grid" is set to ON, the grid is displayed so that objects can be easily positioned during layout. When two or more projects are open, the grid on the Screen window of the active project is set to ON and OFF.



When a check mark is attached to "Grid", the grid is set to ON.

6.7.2 Setting the grid display

The grid can be set to ON/OFF, the suction function can be set to ON/OFF, and the dot-to-dot interval can be specified.

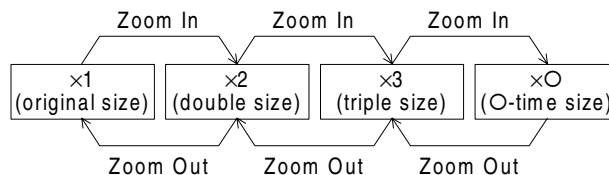


Description on the display contents and the input areas

- 1) Validness of grid
Sets whether or not the grid is displayed on the Screen window.
- 2) Grid Suction
Sets whether or not the upper left corner (start point) of an object is sucked to a dot of the grid. (When "Grid Suction" is set to ON, any object is not located between dots.)
- 3) Dot-to-dot Interval (Longitudinal/Lateral)
Sets the dot-to-dot interval in the longitudinal and lateral directions respectively with an increment of 1 dot. (The default setting is 16 × 16.)

6.7.3 Enlarging and diminishing the screen window

The screen window can be enlarged or diminished to the original size.

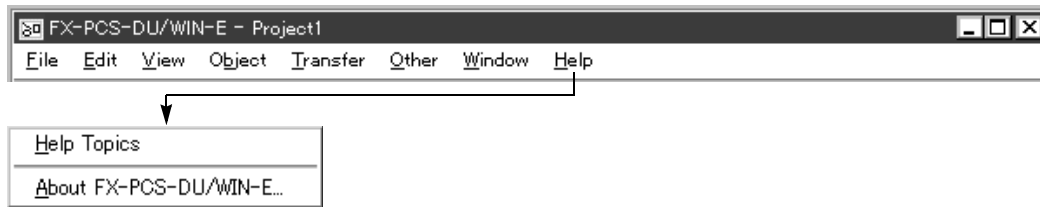


[Zoom In] Enlarges the current Screen window size by "x1" in the longitudinal and lateral directions respectively (The area becomes four times of the former size.).

[Zoom Out] Diminishes the current Screen window size by "x1" in the longitudinal and lateral directions respectively (The area becomes four times a quarter of the former size.).

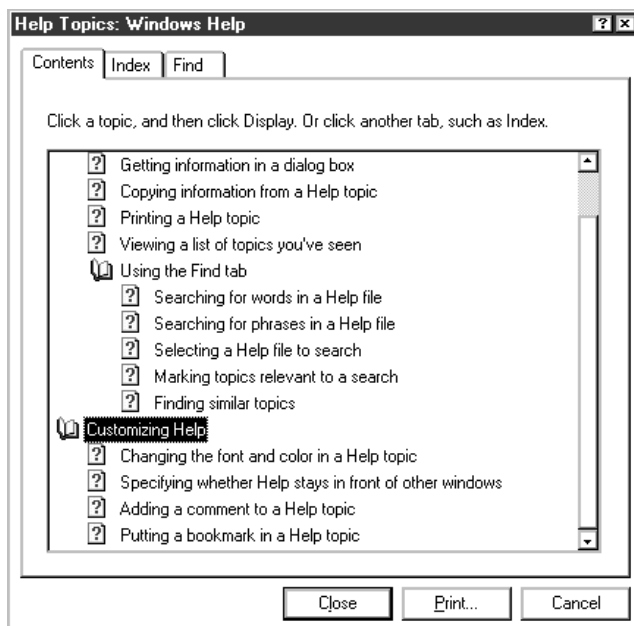
6.8 Help menu

By using the Help menu, the help file can be started up and the version information of the DU/WIN software can be checked.

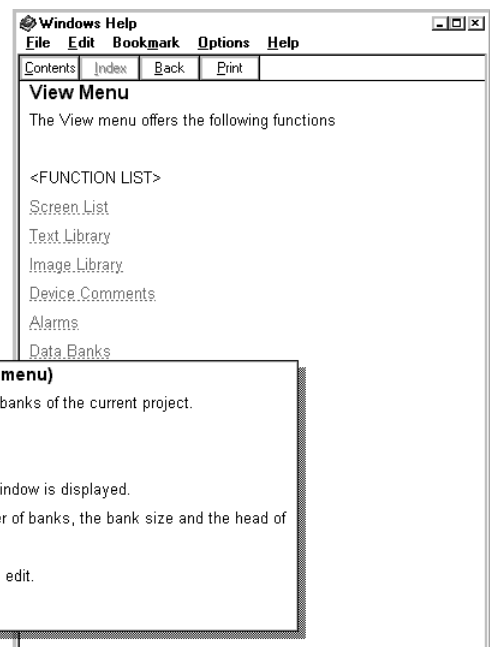


6.8.1 Topics index function

The help dialog box is displayed to indicate the functions and simple introduction of each menu. The operating procedure is equivalent to that for the standard function of the Windows95.



This help dialog box can be executed also from "FX-PCS-DU-WIN-E" in the DU/WIN software holder.

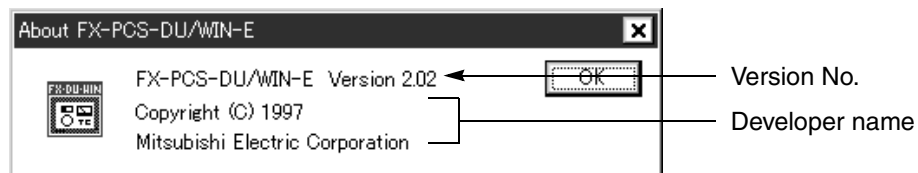


The description on the functions and the objects is displayed on the Help window.

6.8.2 Checking the version of the DU/WIN software

The following dialog box is displayed to indicate the product model name (FX-PCS-DU-WIN) and its version No. (Version 2.02 in this example).

After confirmation, click the OK button.



MEMO

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7. Common Drawing Operations

This section describes the operations and the items common to the objects used to construct user screens.

7.1 Rule on object selection

Object to be displayed on the DU are classified into objects to be displayed on the screen, objects not to be displayed on the screen and key objects.

Among the classified objects, different objects can be selected on the Screen window, the Objects Scr. dialog box and the Key List dialog box.

In the FX-10DU-E, some of attribute objects are selected on the Screen Header dialog box.

This paragraph describes the procedure to open each window/dialog box.

Have in mind that the corresponding dialog box should be made active to create the following objects.

Table:7.1

Object name	Window/dialog box name		
	Screen window	Object List dialog box	Key List dialog box
Change Screen	✓ *1	✓	—
Output Indicator	✓ *1	✓	—
Overlay Screen	✓ *1	✓	—
Buzzer	✓ *1	✓	—
External output	—	—	✓
Mechanical key	—	—	✓

Ver2.4~▶ *1 These objects can be selected.

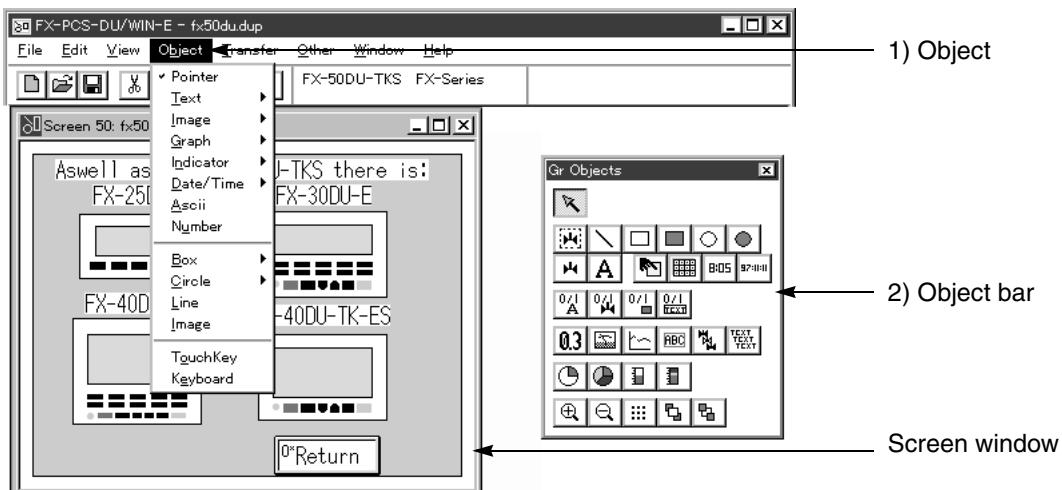
External output: Input from an external I/O in the FX-40DU-TK(B)

Mechanical key: Input from a mechanical switch key in the 10DU to the 40DU-TK

For handling of windows and dialog boxes on which objects can be set, refer to "9.2 Additional functions and corresponding version of the DU".

7.1.1 Editing the objects to be displayed on the screen

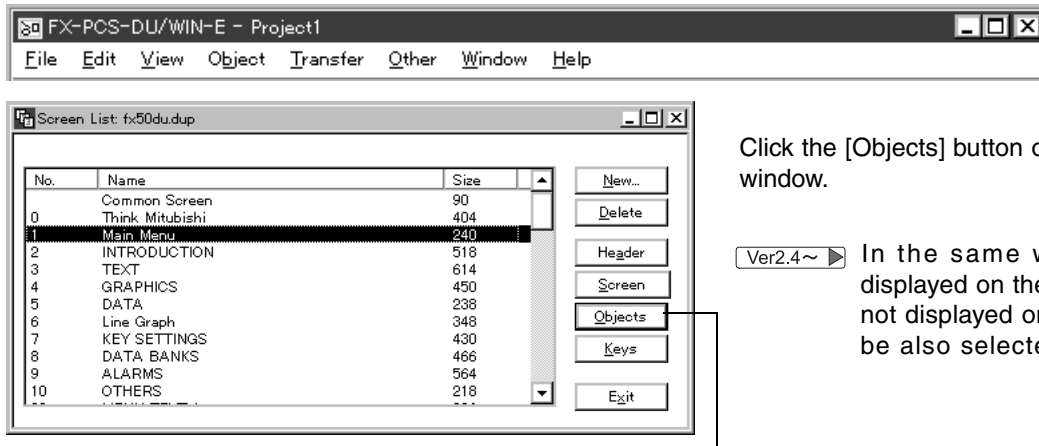
Make the Screen window for the window to be created active. Objects can be selected using "Object" on the menu bar or the object bar.



The dialog box for the selected object is displayed.

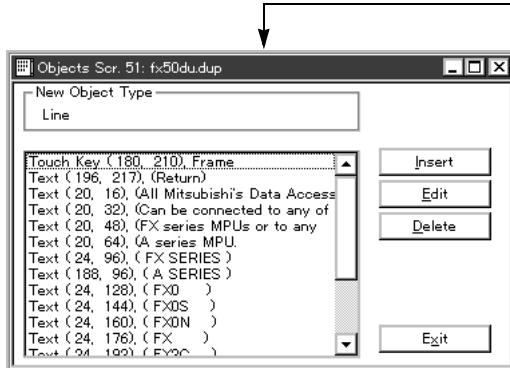
7.1.2 Selecting the objects to be displayed on the screen and the objects not to be displayed on the screen

Make the Objects Scr. dialog box active. Objects can be selected using "Object" on the menu bar or the object bar.

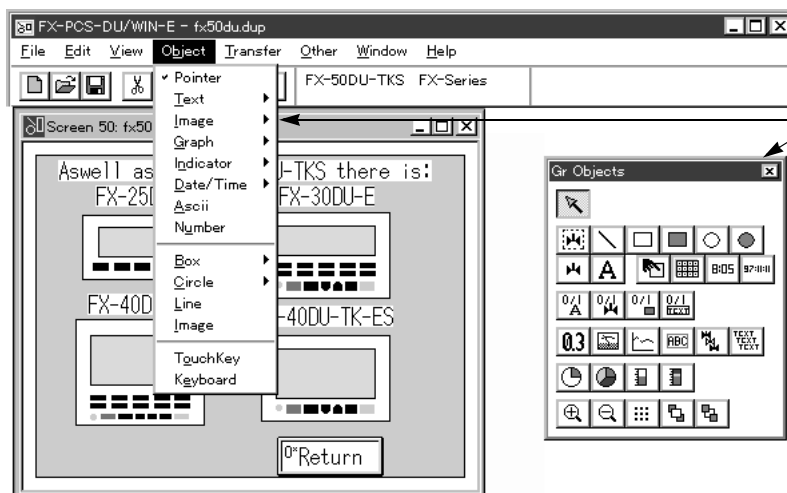


Click the [Objects] button on the Screen List window.

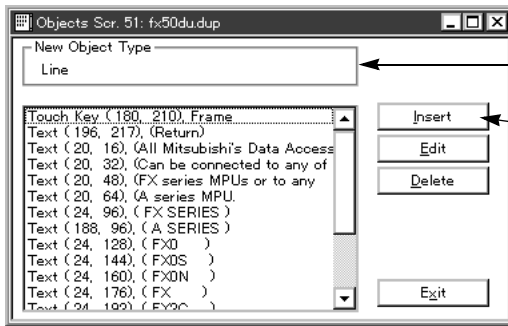
Ver2.4~ In the same way as objects displayed on the screen, objects not displayed on the screen can be also selected from the tool



The Objects Scr. dialog box is opened.



Select an object to be created from "Object" on the menu bar or the Display Object window.



The selected object name is displayed in "Additional Object".

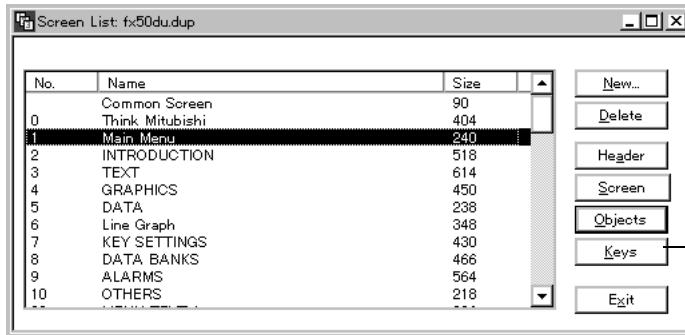
When the Insert button is clicked, the Additional Object dialog box is displayed.



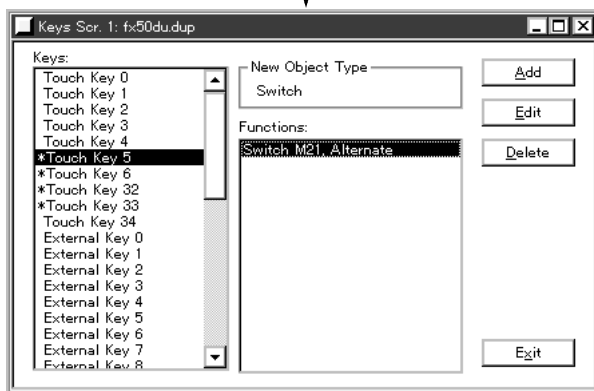
The dialog box for the selected object is displayed.

7.1.3 Editing the key objects

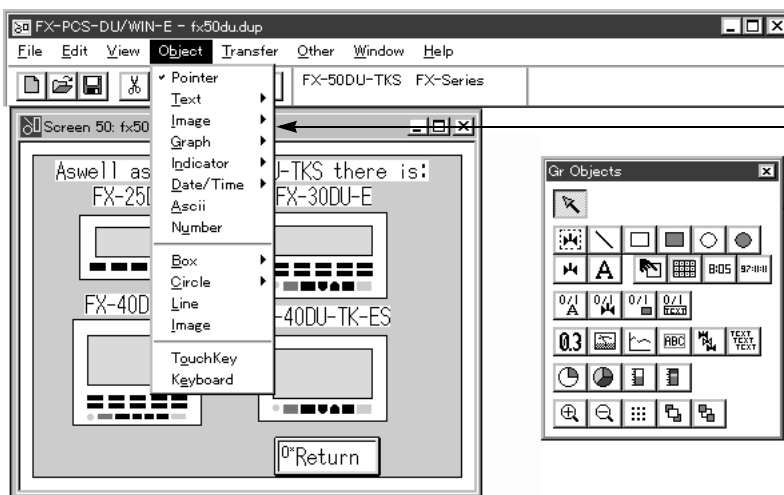
Let the Key List dialog box active. Objects can be selected using "Objects" on the menu bar or the object bar.



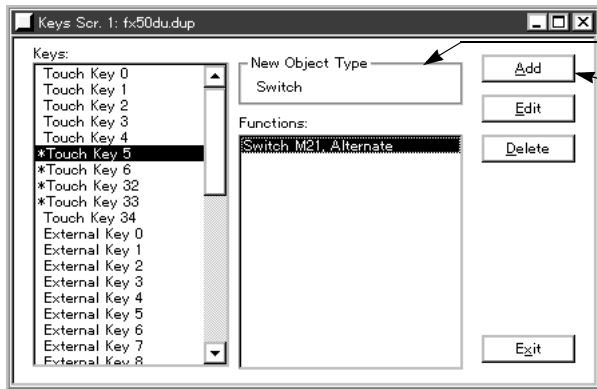
Click the Key button on the Screen List window.



The Key List dialog box is opened.



Select an object to be created from "Object" on the menu bar or the Display Object window.



The selected object name is displayed in "Additional Object".

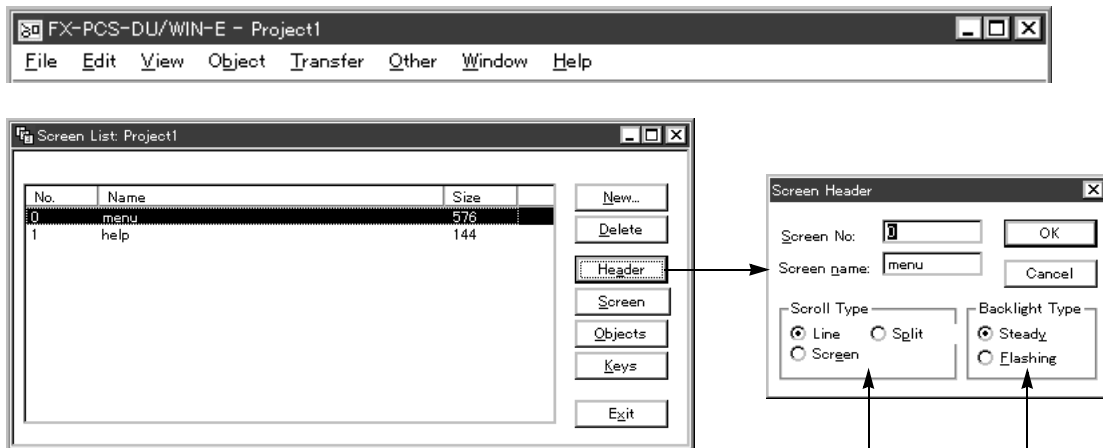
When the Insert button is clicked, the Additional Object dialog box is displayed.



The dialog box for the selected object is displayed.

7.1.4 Editing the attribute objects (Scroll and Flashing) in the FX-10DU-E

Make the Screen Header dialog box active, and select these objects.



Click the Header button on the Screen List window.

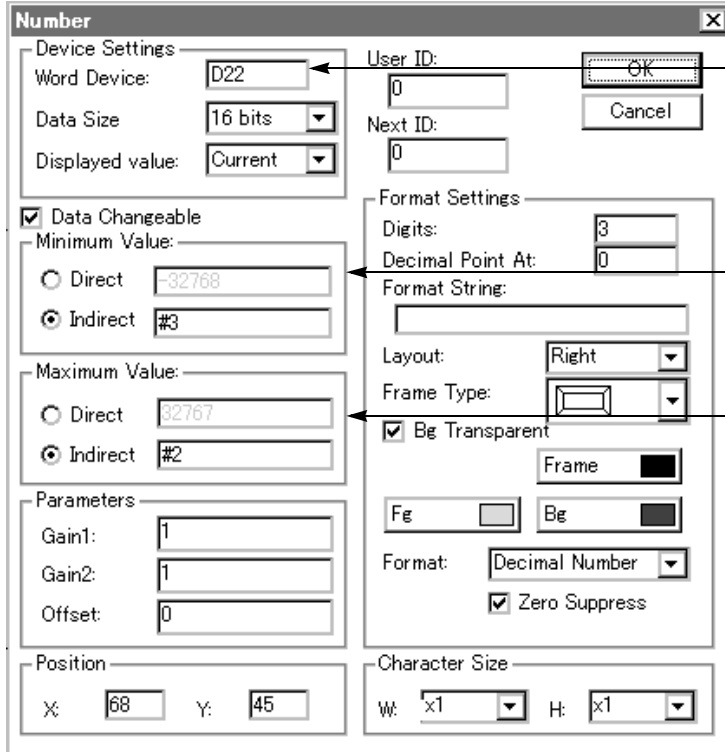
Scroll object

Flashing object

7.2 Specifying object elements using data files (indirect specification)

The data set in a data file in the DU can be used for indirect specification of a device No. and the minimum and maximum values of the set range in setting an object.

Setting example ("Number" object)



Word Device

The data on the word device specified here can be displayed and changed.

Minimum Value (Indirect)

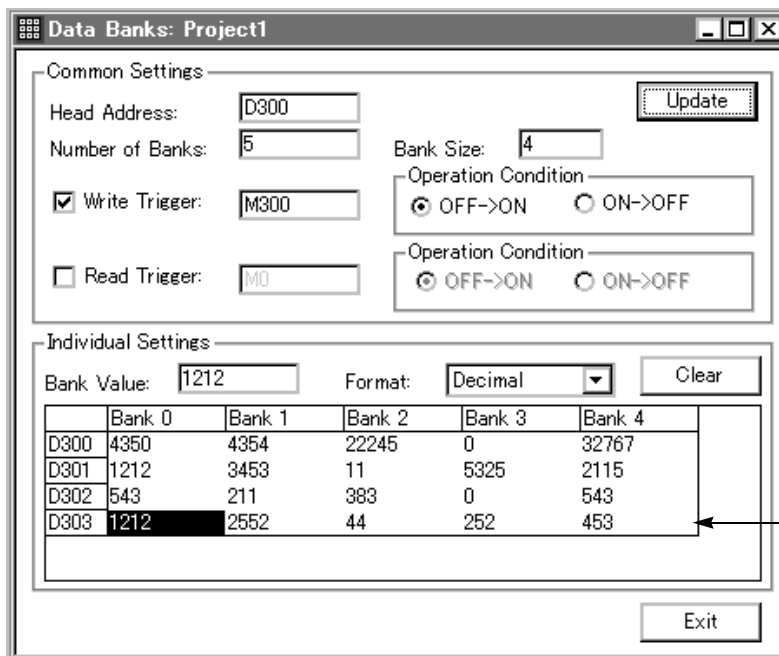
The data on the word device is set to the minimum value of the allowable set range.

Maximum Value (Indirect)

The data on the word device is set to the maximum value of the allowable set range.

A word device (D, T or C) in the PC is usually set to "Word Device", "Minimum Value (Indirect)" and "Maximum Value (Indirect)" respectively. To assign the data in a data file, add "#" at the top of data No.

Data No. in data file



To specify "D302", enter "#3".

To specify "D302":

As the PC transfer destination of the data file, enter "#3" to specify D302 (third device) because "Head Word Device" is set to "D300".

For setting of a data file, refer to Paragraph 6.4.6.



Unapplicable objects

The data No. in a data file cannot be specified for a word device of the objects "Increment", "Decrement", "Write Constant" and "Data Setting".

The data No. in a data file can be specified for a word device of the objects "Number", "Library Text", "Library Image" and "Ascii".

7.3 Assigning character strings and graphics in libraries to the DU

When character strings and graphics preliminarily registered to user screens of the DU are made into libraries, such character strings and graphics can be arbitrarily modified in accordance with instructions sent from the PC.

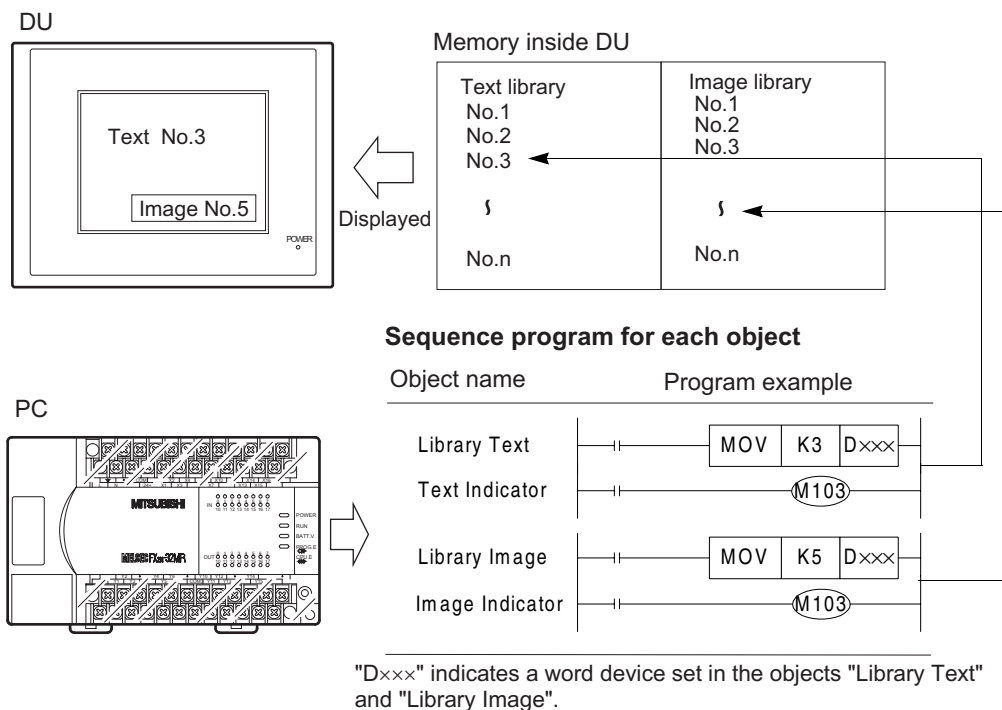
Objects for which creation of the library function is required

Table:7.2

Library name	Object name	Specification method from PC
Text library	Library Text	Specify the text No. using a word device.
	Text Indicator	Specify a text No. using a bit device.
Image library	Image	Specify an image directly using the DU/WIN software.
	Library Image	Specify the image No. using a word device.
	Image Indicator	Specify the image No. using a bit device.

Library function

At first, numbers should be assigned using the libraries to images and texts to be used by the DU/WIN software. When the screen data is transferred to the DU or the F940GOT after that, the image library and the text library are transferred at the same time.



- "Library Text" and "Text Indicator" can be used to specify a character string in the text library. A word device in the PC is used for "Library Text" and a bit device in the PC is used for "Text Indicator" to specify a character string, but the display contents are equivalent in either case.
- "Library Image" and "Image Indicator" can be used to specify a graphic in the graphic library. A word device in the PC is used for "Library Image" and a bit device in the PC is used for "Image Indicator" to specify a graphic, but the display contents are equivalent in either case.

7.4 DU screen specifications

The screen display specifications in each DU type are shown below. Use them as reference in determining object display positions while creating a screen.

Table:7.3

	Number of characters displayed	Resolution	Number of user screens
FX-10DU-E	16 half-width characters × 2 lines	—	16 characters × 16 lines = 1 16 characters × 4 lines = 24
FX-25DU-E	20 half-width/10 full-width characters × 4 lines	160×64	200
FX-30DU-E	30 half-width/15 full-width characters × 4 lines	240×64	256
FX-40DU-ES	30 half-width/15 full-width characters × 7 lines	240×128	256
FX-40DU-TK-E	30 half-width/15 full-width characters × 7 lines	240×128	256
FX-50DU-TK-E FX-50DU-TKS-E	40 half-width/20 full-width characters × 15 lines	320×240	500
F940GOT-SWD-E F940GOT-LWD-E	40 half-width/20 full-width characters × 15 lines	320×240	500
F930GOT-BWD-E	30 half-width/15 full-width characters × 5 lines	240×80	500
F940GOT-SBD-H-E F940GOT-LBD-H-E	40 half-width/20 full-width characters × 15 lines	320×240	500
F940WGOT-TWD-E	60 half-width/30 full-width characters × 14 lines	480×234	500
F930GOT-BBD-K-E	30 half-width/15 full-width characters × 5 lines	240×80	500
F920GOT-BBD5-K-E	16 half-width/8 full-width characters × 4 lines	128×64	500

Full-width characters are offered when 2-byte JIS codes (Japanese) are used.

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8. Object Function Description

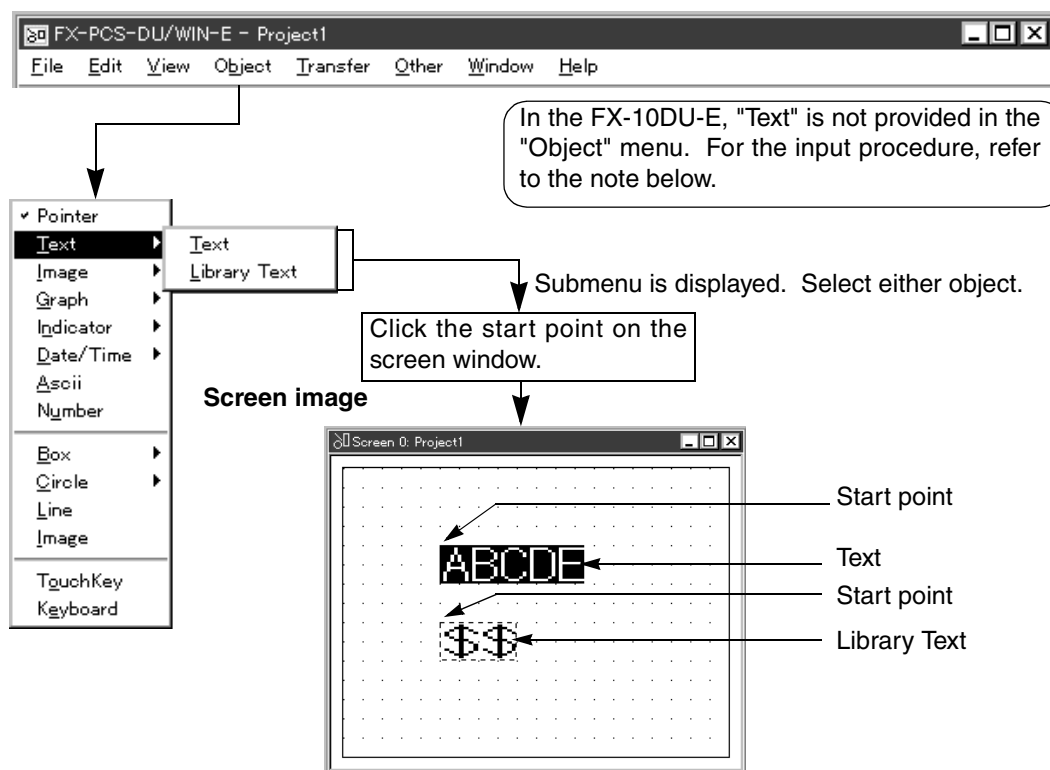
This section describes the setting contents of each object displayed on the DU screen and the difference in the setting contents caused by the DU type.

For the detail specifications of each object varying depending on the DU type and the programs to display the set objects and control them in the PC, refer to the operation manual of each DU.

8.1 Setting the "Text" object

The "Text" object allows to display characters such as alphabets and numerics on the DU screen.

Two objects are offered on the pull-down submenu of "Text" as follows in accordance with the specification method. These available objects are not available in some DU types.



Description on the objects

[Text] [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
 Displays directly the characters entered in the character size and the position specified.
 For the FX-10DU, refer to "8.14 Setting the objects related to the FX-10DU".

[Library Text] [25DU] [50DU-TK] [F940GOT]
 Changes over and displays a characters registered in the text library by specifying a word device in the PC (indirect method).
 "\$\$" is displayed in the position in which a character string is specified.
 Up to 20 full-width characters can be registered as a text to the text library. Pay rigid attention to the display position, and make sure that all characters of each registered text is displayed within the display area. Characters which cannot be displayed in the display area are ignored.



Character input method in the FX-10DU-E

The "Text" object is not displayed on the Object menu.
 To enter characters, click a desired display position on the Screen window using the mouse to move the cursor (a flashing "|" mark) to the position, then enter characters. Available characters are half-width characters (Katakana, alphabets, numerics and symbols).

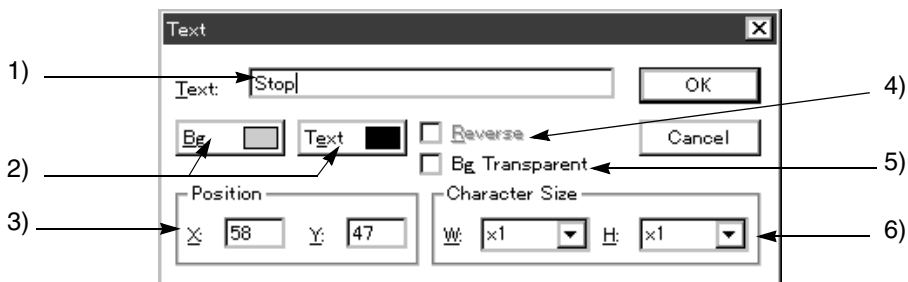
8.1.1 Text

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

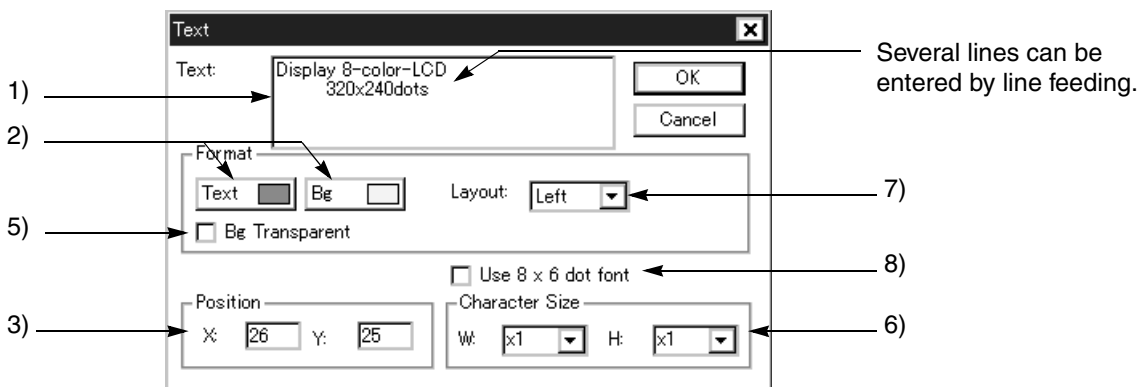
The "Text" object allows to display directly characters on the DU screen.

Text setting dialog box

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT



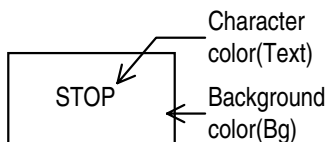
Input items

- 1) Text
Enter the characters to be displayed on the DU screen.

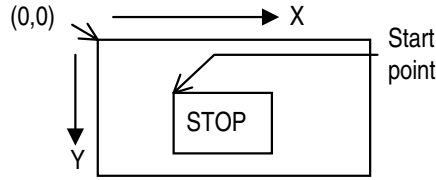
Table:8.1

Displayed character type		Alphabets, numerics, Katakana, Hiragana, Kanji (JIS Level 1) and external characters
Number of characters	25DU, 30DU, 40DU, 50DU-TK	40 half-width/20 full-width characters, horizontal writing
	F940WGOT	Up to 60 half-width/30-full width characters (displayed in horizontally) (Text can be displayed in two or more lines.)
	F940GOT	40 half-width/20 full-width characters, horizontal writing (in several lines)
	F930GOT	Up to 30 half-width/15-full width characters (displayed in horizontally) (Texts can be displayed in two or more lines.)

- 2) Bg and Text
Select the background color and the character color respectively from the color pallet. [50DU-TK] [F940GOT]



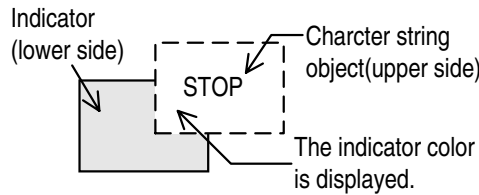
- 3) Position
Enter the X and Y coordinates as the start position from which the character string is to be displayed.



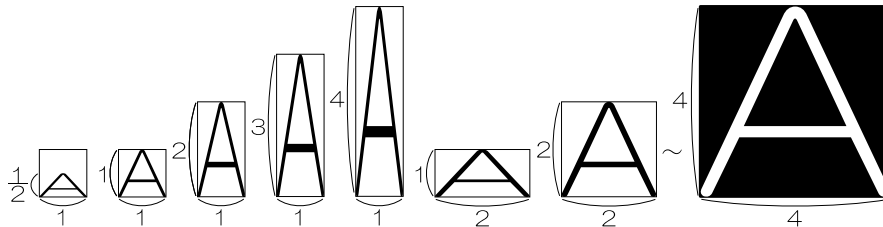
- 4) Reverse [30DU] [40DU] [40DU-TK]
When this item is selected, the background color and the character color are reversed.



- 5) Bg Transparent [50DU-TK] [F940GOT]
When this item is selected, the background color becomes transparent and the color of an object under the text is displayed.



- 6) Character Size
Select the character size (width and height) to be displayed.

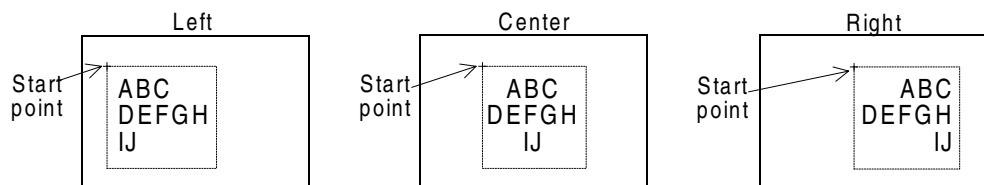


- W (width): Select one among "x1", "x2", "x3" and "x4".
- H (height): Select one among the available alternatives shown in the table below.

Table:8.2

	x0.5	x1	x2	x3	x4
25DU, 50DU-TK, F940GOT	✓	✓	✓	✓	✓
Any other DU type	—	✓	✓	✓	✓

- 7) Layout
When the entered characters occupy two or more lines, the characters can be shifted to the left, the center or the right.



- Ver2.5~ 8) Use of 8 x 6 dot font
Each half-width character is displayed in "8 x 6 dots" instead of "16 x 8 dots". Alphabets, numbers, half-width Katakana characters and symbols only can be displayed in this font. If a full-width character is included in the text, it is displayed as "■" of 8 x 12 dots. ("Use of 8 x 6 dot font" is available in the GOT-F900 main unit whose serial No. is "13****" (March, 2001) and later.)

8.1.2 Library Text

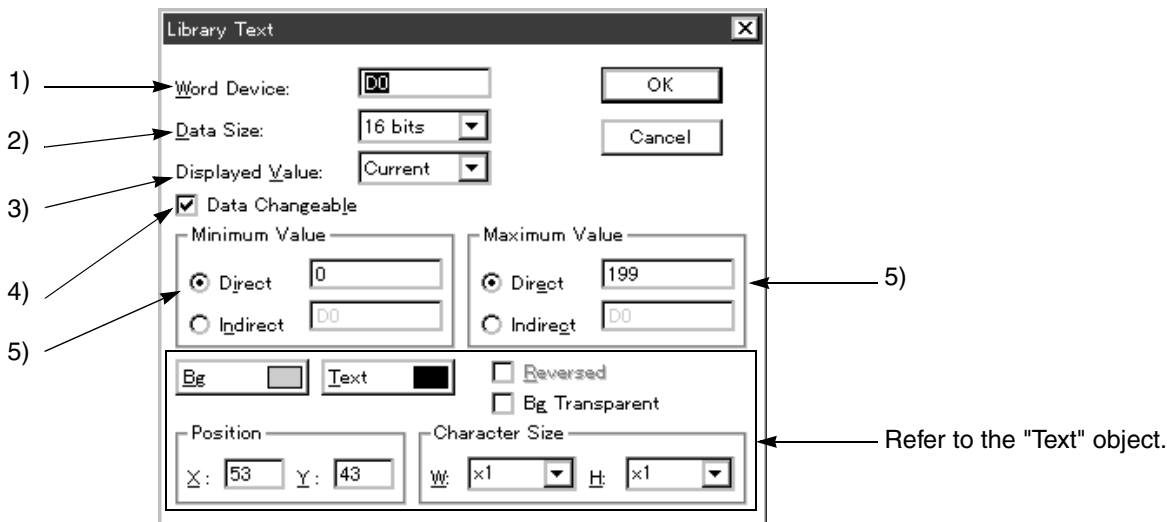
Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Library Text" object allows to change arbitrarily the No. corresponding to the character string registered in "Text Library" by specifying a word device in the PC.

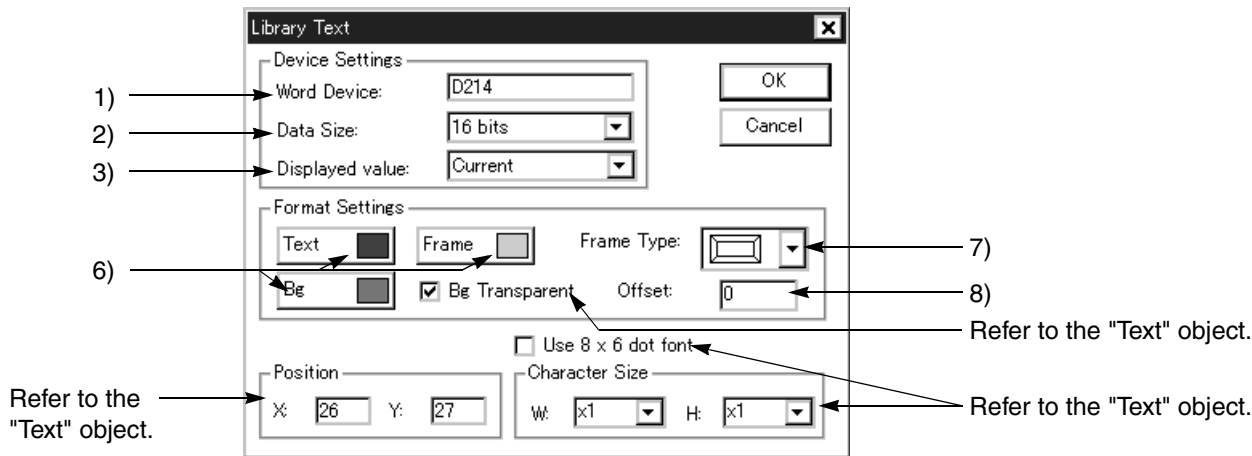
Before using the "Library Text" object, texts to be displayed should be preliminarily registered to the text library. For the details, refer to Paragraph 7.3.

Library Text setting dialog box

25DU and 50DU-TK



F940GOT



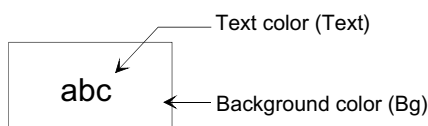
Input items

- 1) Word Device
Enter the word device in the PC which specifies the No. in the text library.
The word devices available varies depending on the PC. Refer to the device No. list for each PC.
- 2) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 1) Word Device.
- 3) Displayed Value
Select "Current" or "Preset" as the type of the data specified in 1) Word Device.
The available data type varies depending on the word device as shown in the table below.
In the F940GOT, only "16 bits" is available in 2) Data Size.

Table:8.3

1) Word Device	2) Data Size	3) Displayed Value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

- 4) Data Changeable
Set whether or not the data of the device specified in 1) Word Device can be changed using the objects "Increment" and "Decrement" or the ten-keys in the DU. When "Preset" is selected in 3) Displayed Value, "Data Changeable" should be selected so that the system becomes the status in which programs in the PC can be modified.
- 5) Minimum Value and Maximum Value
Set the lower limit and the upper limit of numerics which can be entered to a word device when 4) Data Changeable is selected (when the check mark "✓" is added).
Direct: Enter a numeric directly.
(2) Data Size 16 bits: -32,768 to +32,767 32 bits: -2,147,483,648 to +2,147,483,647)
Indirect: Enter a word device (T, C, D, V or Z) in the PC.
- 6) Bg and Text
Select each color from the color pallet.



- 7) Frame Type
Text can be displayed inside a frame.

Table:8.4

Display form				
	No frame	Single frame	Double frame (keyboard)	Double frame (trimmed)

- 8) Start No.
A text corresponding to the value specified in 1) Word Device plus this value is displayed.
Example: Word Device D0 = K25 In this case,
Start No. = 5
K25 + 5 = 30 Text No. 30 is displayed.



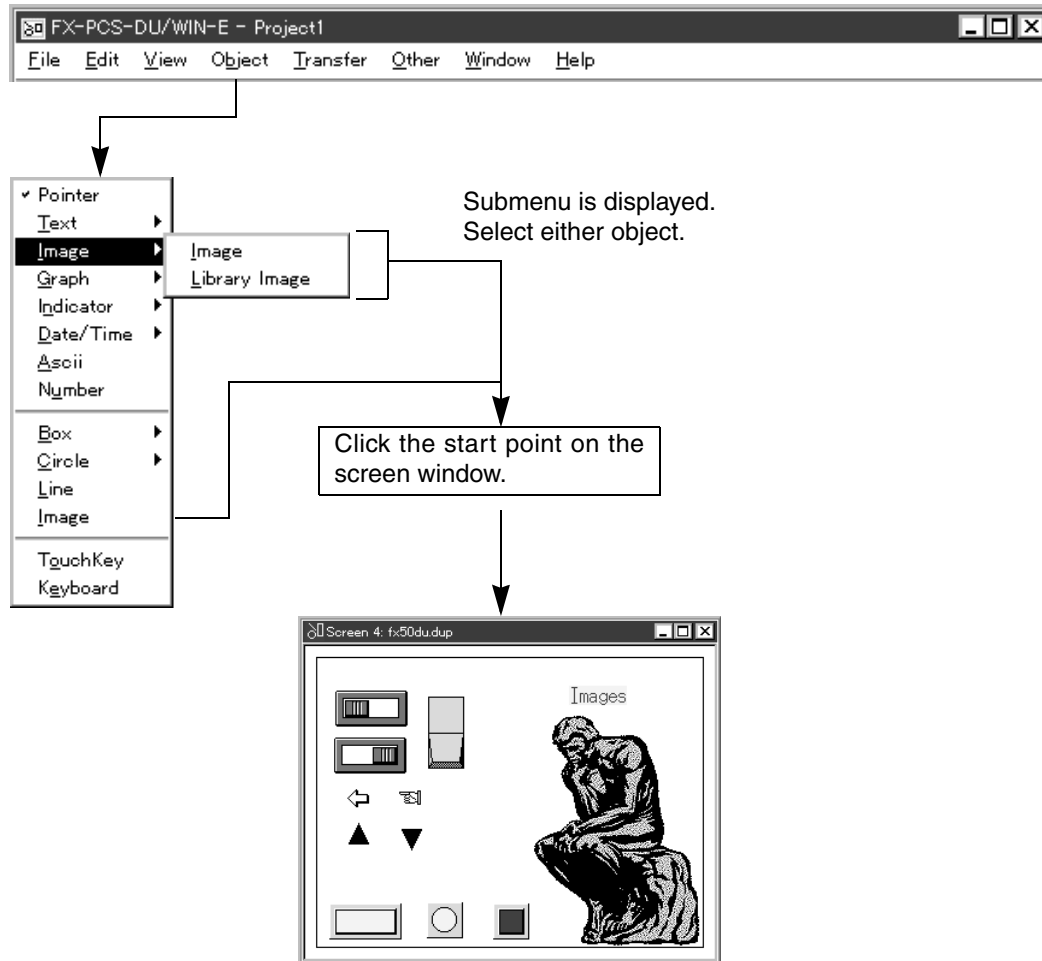
Indirect specification using a data file

Values in a data file can be specified for 1) Word Device and 5) Minimum Value and Maximum Value (exclusively when "Indirect" is selected).

8.2 Setting the "Image" object

The "Image" object allows to display graphics on the DU screen.

Two objects are offered on the pull-down submenu of "Image" as follows in accordance with the specification method.



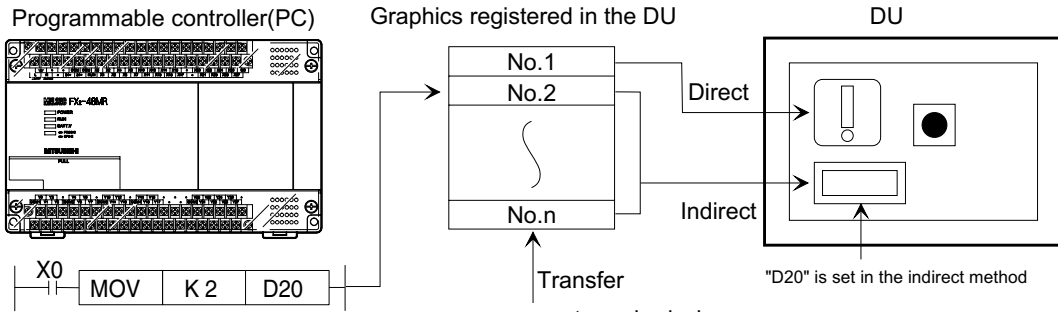
Description on the objects

- [Image] [50DU-TK] [F940GOT]
Displays a graphic directly by specifying an image No. registered in the image library.
- [Library Image] [50DU-TK] [F940GOT]
Changes over and displays a graphic by specifying a word device in the PC to which an image No. is set (indirect method).

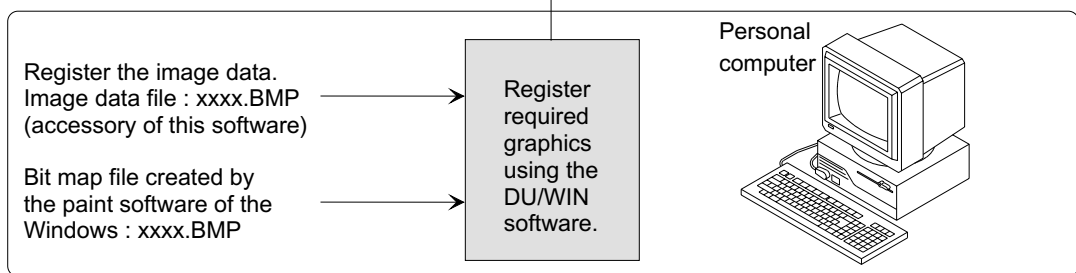


How to display graphics

To display graphics, you should preliminarily register only graphics to be used using the "View"- "Library Image" function in the DU/WIN, and assign an image No. to each graphic.



Sequence programs are not required when "Image" is selected on the submenu.



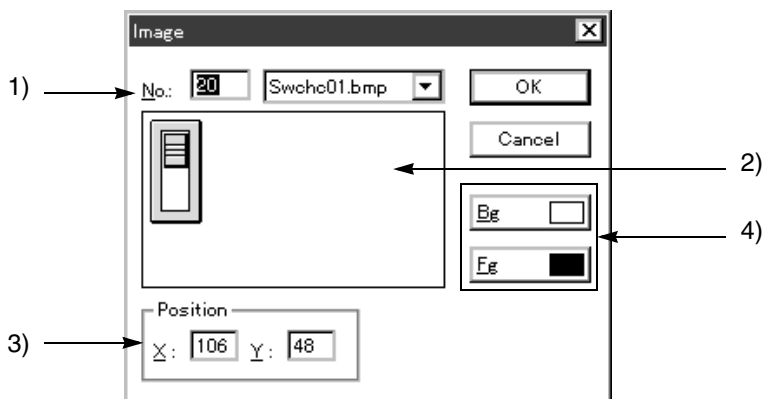
8.2.1 Image

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Image" object allows to specify directly an image No. registered in the image library, and display the corresponding graphic on the DU screen.

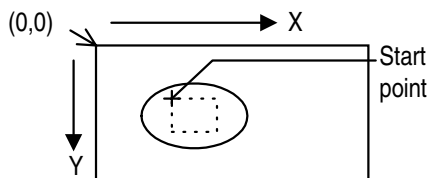
Before using images, images to be displayed should be preliminarily registered to the image library. For the details, refer to Paragraph 7.3.

Image setting dialog box



Input items

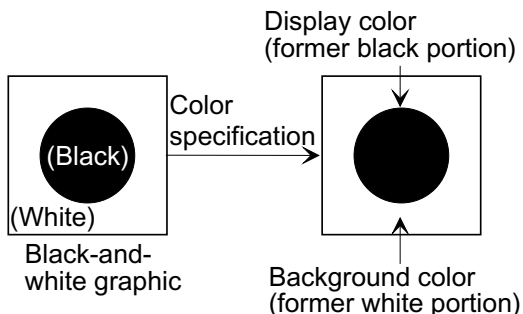
- 1) No
Enter the No. of the graphic to be displayed. Or select the graphic comment of the graphic to be displayed.
- 2) Graphic image display area
The graphic specified in 1) No is displayed.
- 3) Position
Enter the X and Y coordinates as the start point from which the graphic is to be displayed.



- 4) Bg and Fg
Select the background color and the graphic color respectively the color pallet.

Graphic types

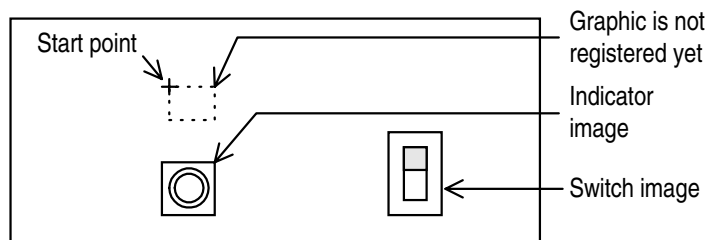
- Color graphic
Because the color of the graphic has the priority, color specification is invalid.
- Black-and-white graphic
Color specification is valid as shown below (in the FX-50DU-TKS-E exclusively).
In the F940GOT, "Indicator" objects can be overlaid on the screen.



Screen image

The specified graphic is displayed while the start point specified in 3) Position is regarded as the upper left corner of the graphic.

When a library No. in which no graphic is registered is specified, an area of 16×16 dots is temporarily assured.



8.2.2 Library Image

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Library Image" object allows to change arbitrarily the graphic No. registered in "Image Library" by specifying a word device in the PC selected.

Before using images, images to be displayed should be preliminarily registered to the image library. For the details, refer to Paragraph 7.3.

Library Image setting dialog box

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

1) Word Device: D0

2) Data Size: 16 bits

3) Displayed value: Current

4) Data Changeable

5) Minimum Value: Direct 0, Indirect D0

Maximum Value: Direct 199, Indirect D0

Position: X: 35, Y: 37

Bg: Eg:

Refer to the "Image". object

F940GOT

1) Word Device: D235

2) Data Size: 16 bits

3) Displayed value: Current

6) Offset: 0

Position: X: 11, Y: 38

Refer to the "Image". object

Input items

- 1) Word Device
Enter the word device in the PC which specifies the No. in the image library. The word devices available varies depending on the PC. Refer to the device No. list for each PC.
- 2) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 1) Word Device.

- 3) Displayed Value
 Select "Current" or "Preset" as the type of the data specified in 1) Word Device.
 The available data type varies depending on the word device as shown in the table below.

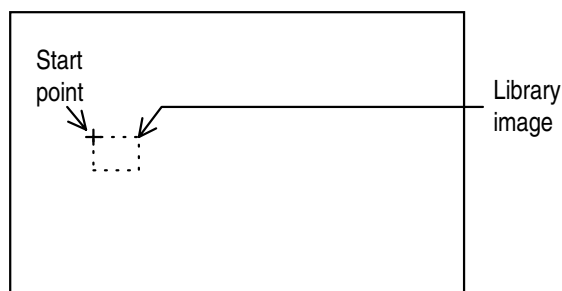
Table:8.5

1) Word Device	2) Data Size	3) Displayed Value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

- 4) Data Changeable
 Set whether or not the data of the device specified in 1) Word Device can be changed using the objects "Increment" and "Decrement" or the ten-keys in the DU. When "Preset" is selected in 3) Displayed Value, "Data Changeable" should be selected so that the system becomes the status in which programs in the PC can be modified.
- 5) Minimum Value and Maximum Value
 Set the lower limit and the upper limit of numerics which can be entered to a word device when 4) Data Changeable is selected (when the check mark "✓" is added).
 Direct: Enter a numeric directly.
 (2) Data Size 16 bits: -32,768 to +32,767 32 bits: -2,147,483,648 to +2,147,483,647)
 Indirect: Enter a word device (T, C, D, V or Z) in the PC.
- 6) Start No.
 An image corresponding to the value specified in 1) Word Device plus this value is displayed.
 Example: Word Device D0 = K25 In this case,
 Start No. = 5
 K25 + 5 = 30 Image No. 30 is displayed.

Screen image

An area of 16 × 16 dots is temporarily assured while the start point specified in 3) Position is regarded as the upper left corner of the graphic.
 The specified graphic is displayed from this point in accordance with the size.

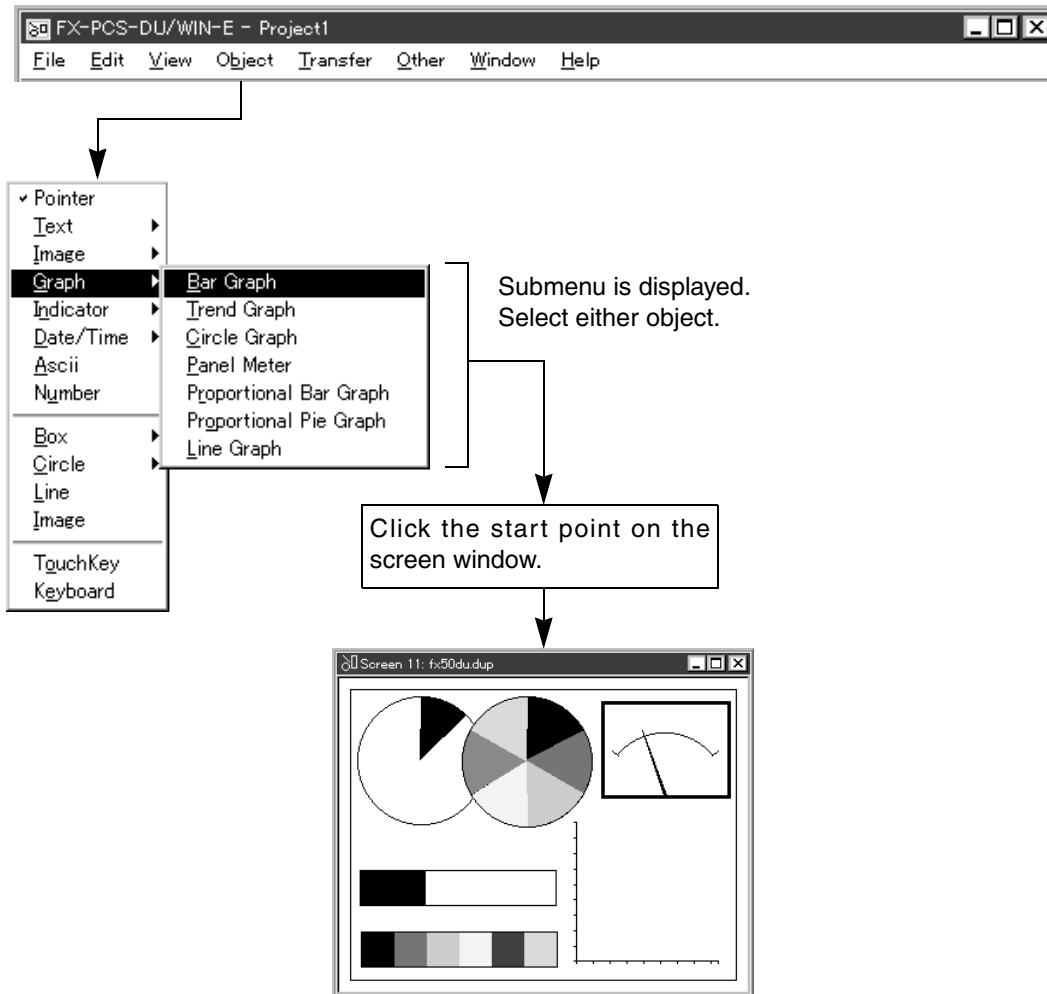


Indirect specification using a data file

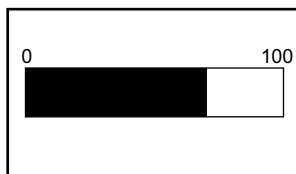
Values in a data file can be specified for 1) Word Device and 5) Minimum Value and Maximum Value (exclusively when "Indirect" is selected).

8.3 Setting the "Graph" object

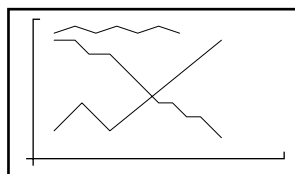
The "Graph" object allows to display diversified graphs on the DU screen. Each graph is displayed as the ratio against the value of the specified word device.



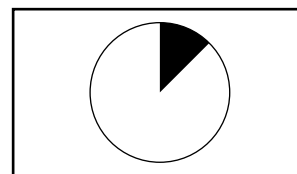
Description on the objects



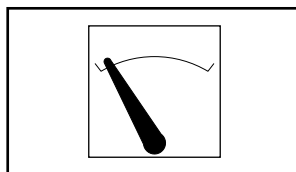
[Bar Graph(B)]



[Trend Graph(T)]



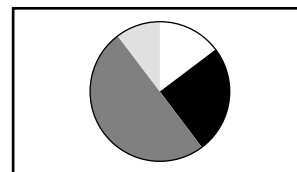
[Circle Graph(C)]



[Panel Meter(P)]



[Proportional Bar Graph(R)]



[Proportional Pie Graph(O)]

List of graphs supported in each DU type

Table:8.6

Graph	10DU	25DU	30DU	40DU	40DU-TK	50DU-TK	F940GOT
Bar Graph	—	✓	✓	✓	✓	✓	✓
Trend Graph	—	—	—	—	—	✓	✓*2
Circle Graph	—	—	—	—	—	✓	✓
Panel Meter	—	—	—	—	—	✓*1	✓
Proportional Bar Graph	—	—	—	—	—	✓*1	✓*2
Proportional Pie Graph	—	—	—	—	—	✓*1	✓*2
Line Graph	—	—	—	—	—	—	✓*2

✓:Supported —:Not supported

*1 Supported in the FX-50DU-TK(S)-E whose version is 2.0 or later.

*2 It is not supported in the F920GOT-K.

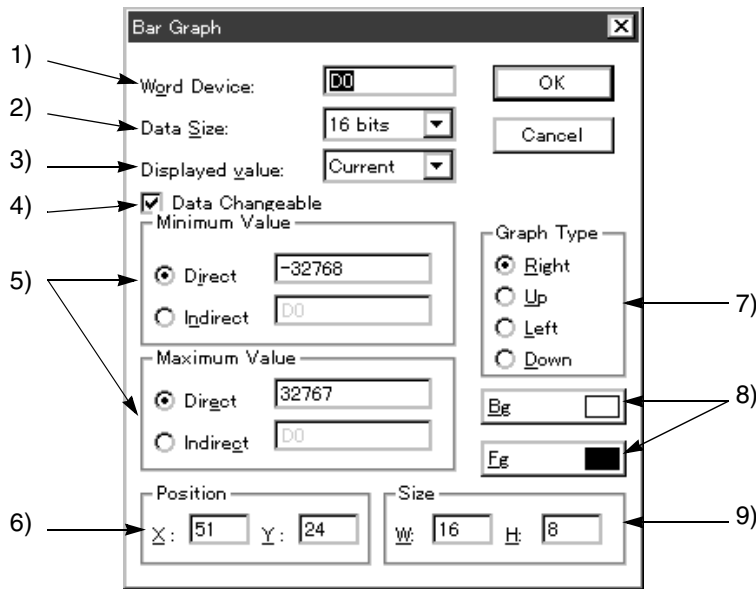
8.3.1 Bar Graph

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

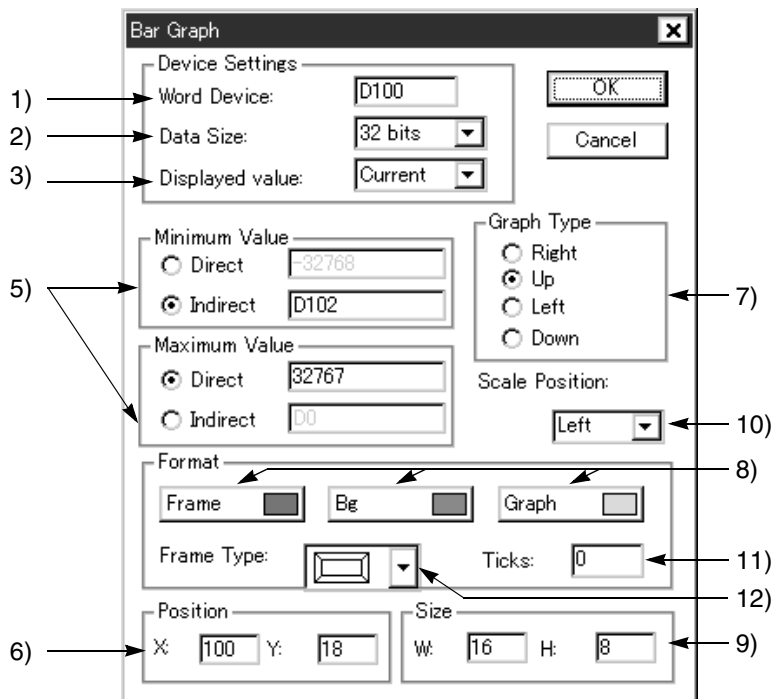
The "Bar Graph" object displays the value of one specified word device in the PC as the ratio against 100%.

Bar Graph setting dialog box

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT



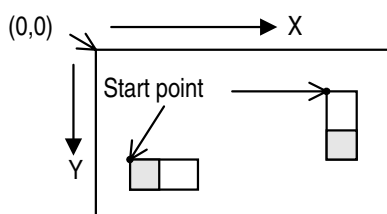
Input items

- 1) Word Device
Enter a word device in the PC which specifies the No. in the image library.
Available word devices: T, C, D, V, Z
- 2) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 1) Word Device.
- 3) Displayed value
Select "Current" or "Preset" as the type of the data specified in 1) Word Device.
The available data type varies depending on the word device as shown in the table below.

Table:8.7

1) Word Device	2) Data Size	3) Displayed value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

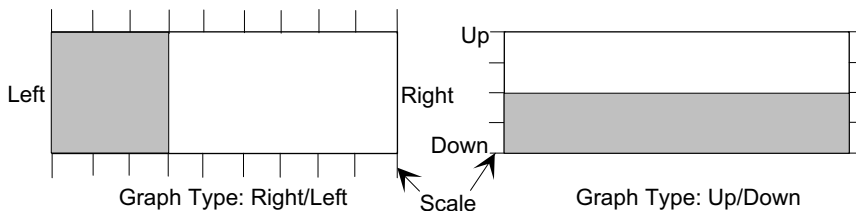
- 4) Data Changeable
Set whether or not the data of the device specified in 1) Word Device can be changed using the keyboard, the ten-key pad built in the DU, the "Increment" object and the "Decrement" object.
However, when "Preset" is selected in 3) Displayed Value, "Data Changeable" should be set effective so that the system becomes the status in which programs in the PC can be changed.
This setting cannot be performed in the F940GOT.
- 5) Minimum Value and Maximum Value
Set the lower limit and the upper limit of numerics which can be entered to a word device when 4) Data Changeable is selected (when the check mark "✓" is added).
Direct: Enter a numeric directly.
(2) Data Size 16 bits: -32,768 to +32,767 32 bits: -2,147,483,648 to +2,147,483,647)
Indirect: Enter a word device (T, C, D, V or Z).
- 6) Position
Enter the X and Y coordinates as the start point from which the graph is to be displayed.



- 7) Graph Type
Select the bar graph shape and the change direction by clicking the desired radio button.
Right: Horizontal (from right to left)
Up: Vertical (from top to bottom)
Left: Horizontal (from left to right)
Down: Vertical (from bottom to top)
- 8) Bg and Fg
Select the background color and the bar graph respectively from the color pallet.
- 9) Size
Enter a numeric in dots to "W" (width) and "H" (height) respectively as the display size.
Available size: 16 × 8 dots ~ 320 × 240 dots (W × H)

10) Scale Position

Select the scale position among "Left", "Right", "Up" and "Down". The scale position should be selected in accordance with 7) Graph Type.



11) Ticks

Set the number of divisions of the scale displayed in the position specified in 10) Scale Position.

50DU-TK

Available number of divisions: 2 to 10 (divided into equal portions)

F940GOT

Available number of divisions: 0, 2 to 50 (divided into equal portions)

When "0" is selected, the scale is not displayed.

12) Frame Type

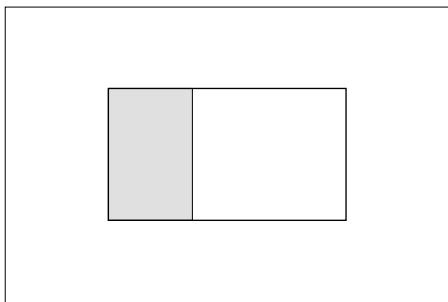
Select the form of a frame displayed around the bar graph.

Table:8.8

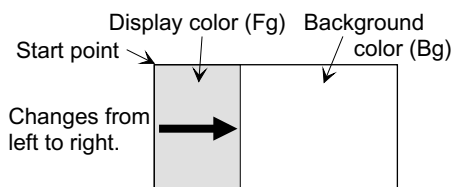
Display form				
	No frame	Single frame	Double frame (keyboard)	Double frame (trimmed)

Screen image

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

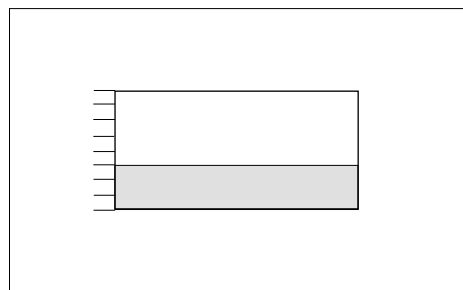


Example of "Left" graph

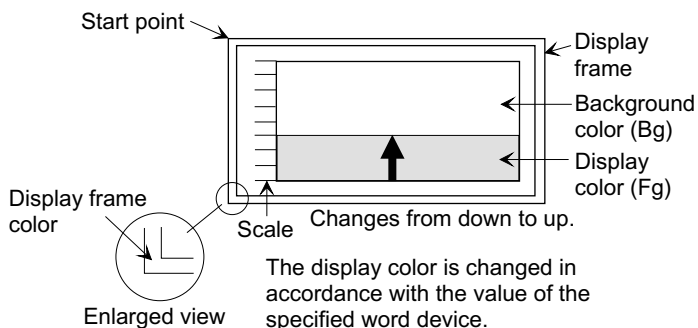


The display color is changed in accordance with the value of the specified word device.

F940GOT



Example of "Up" graph



The display color is changed in accordance with the value of the specified word device.



Indirect specification using a data file

Values in a data file can be specified for 1) Word Device and 5) Minimum Value and Maximum Value (exclusively when "Indirect" is selected).

8.3.2 Trend Graph (Sampling)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Trend Graph (Sampling)" object displays up to four specified word devices in the PC as trend graphs respectively.

Trend Graph (Sampling) setting dialog box

50DU-TK

F940GOT

Input items

- 1) Word Device
Enter the top word device in the PC. Four consecutive word devices from the one specified here are assigned to No. 1 to No. 4 in "Shown Devices" respectively.

50DU-TK

Word devices (D only)

F940GOT

Word devices (T (current value), C (current value) and D)

- 2) Minimum Value and Maximum Value
Specify the range in which the data assigned to the word device specified in 1) Word Device is read in the sampling cycle specified in 4) Sample. Cycle and displayed in the vertical axis. The minimum value is regarded as 0% and the maximum value is regarded as 100% in the graph. (When a value exceeds this range, the displayed trend graph is discontinued.)

50DU-TK

Enter a numeric.16 bits: -32768 to +32767

F940GOT

Direct: Enter a numeric directly.
(7) Data Size16 bits: -32,768 to +32,767
32 bits: -2,147,483,648 to +2,147,483,647
Indirect: Enter a word device (T, C, D, V or Z).

- 3) Ticks Vertical
Enter the number of scales in the horizontal and vertical axes of the graph respectively.

50DU-TK

Available number of scales: 2 to 10 (divided into equal portions)

F940GOT

Available number of divisions: 0, 2 to 50 (divided into equal portions)
When "0" is selected, the scale is not displayed.

- 4) Sampl. Cycle (s)
Set the time interval in which the word devices in the PC specified in 1) Word Device are sampled.
Cycle: 1 to 65,535 (seconds) (increment: 1)
- 5) Shown Devices
Select the line type (None, Unbroken, Broken, Dotted, Dashed) and the line color. When "None" is selected, the line is not displayed.
- 6) Bg and Frame
Set the display colors of the graph.

50DU-TK

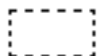



Select the horizontal/vertical axis color of the graph.

F940GOT

Select the background color and the horizontal/vertical axis color of the graph.

- 7) Data Size
Select the data size of 1) Word Device between "16 bits" and "32 bits".
When a high speed counter or 32-bit counter is set to 1) Word Device, make sure to select "32 bits".
- 8) Direction
Select the trend graph plotting direction (right or left).
- 9) Store in Memory
Set whether or not the sampled data is to be stored in the memory in the F940GOT.
Stored (with check mark):Even after the screen is changed over and returned to the current screen, the trend graph is displayed with previous values.
Not stored (without check mark):After the screen is changed over and returned to the current screen, the trend graph is displayed with new values.
- 10) Clear Trigger
Set the bit device to clear the memory when 9) Memory Store is set effective (with a check mark).
- 11) Execution Condition
Select the condition to clear the memory between "OFF → ON (rising)" and "ON → OFF (falling)" of the bit device specified in 10) Clear Trigger when 9) Memory Store is set effective.
- 12) Frame Type
Select the form of a frame displayed around the trend graph.

Table:8.9

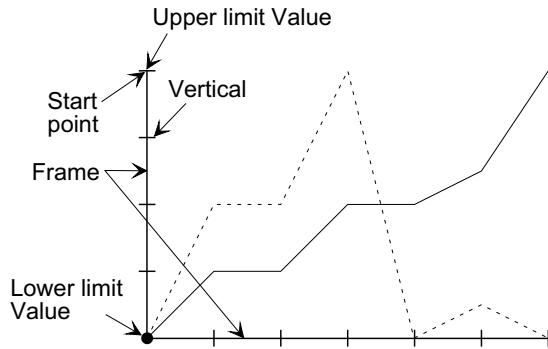
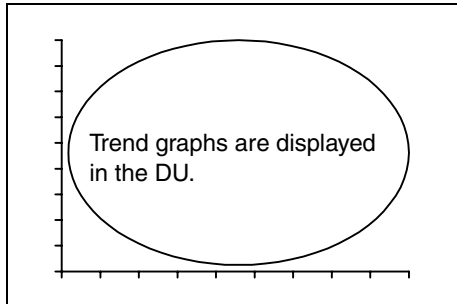
Display form				
	No frame	Single frame	Double frame (keyboard)	Double frame (trimmed)

* When "No frame" is selected, a dotted-line frame is displayed in the DU-WIN software, and no frame is displayed in the DU and the F940GOT.

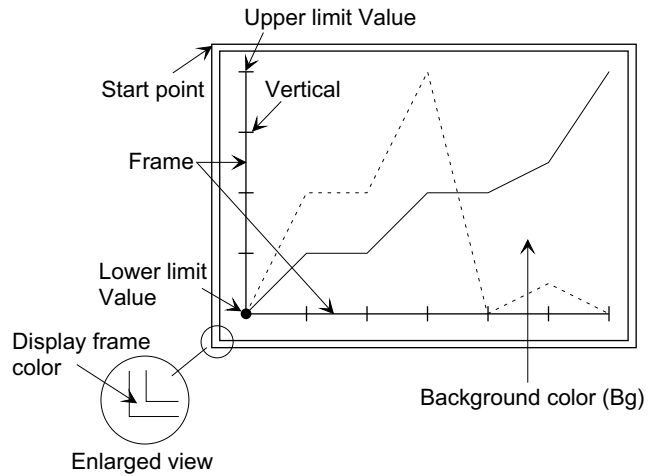
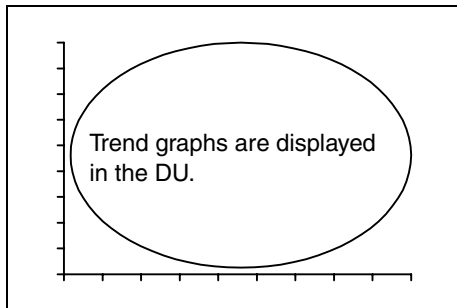
Screen Image

The vertical and horizontal axes exclusively are displayed on the personal computer screen (Trend graphs are not displayed.).

50DU-TK



F940GOT



8.3.3 Circle Graph

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Circle Graph" object displays the value of one specified word device in the PC as the ratio against 100%.

50DU-TK

1) → Word Device:

OK Cancel

Data Size:

Displayed value:

Data Changeable

Minimum Value

Direct

Indirect

Maximum Value

Direct

Indirect

Bg Eg

Position

CX: CY:

Start Position

Top

Right

Bottom

Left

Direction

Clockwise

Anticlockwise

Size

Radius:

Refer to the "Bar Graph" object.

2)

3)

4)

F940GOT

1) → Word Device:

OK Cancel

Data Size:

Displayed value:

Data Changeable

Minimum Value

Direct

Indirect

Maximum Value

Direct

Indirect

Format Settings

Frame Bg Graph

Frame Type:

Ticks:

Position

X: Y:

Size

Radius:

Start Position

Top

Right

Bottom

Left

Direction

Clockwise

Anticlockwise

Refer to the "Bar Graph" object.

Refer to the "Bar Graph" object.

Refer to the "Bar Graph" object.

Refer to the "Bar Graph" object.

2)

3)

4)

Input items

- 1) Word Device
Enter a word device in the PC to be displayed as the level of a circle graph.

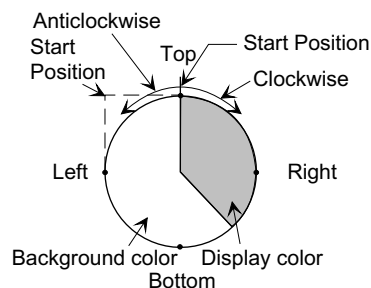
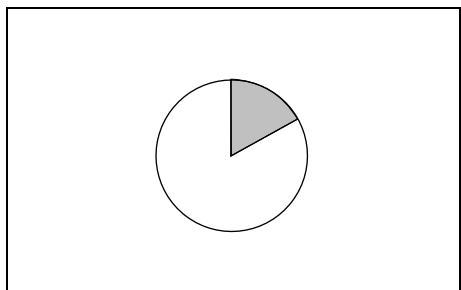
Table:8.10

Word Device	Data Size	Displayed value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

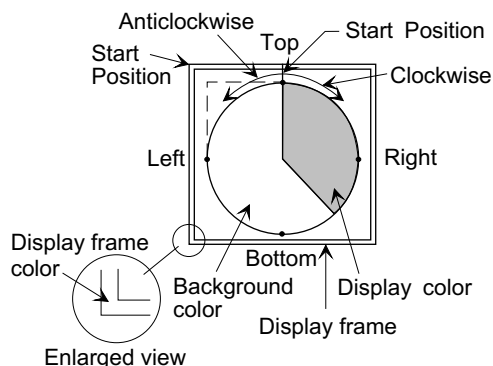
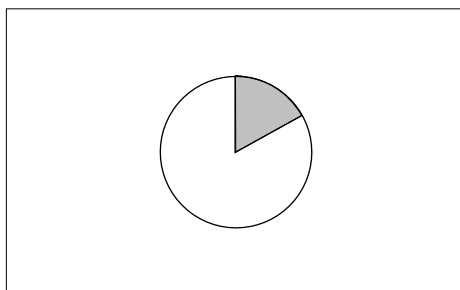
- 2) Start Position
Specify the position from which the display color starts to change in accordance with the word device value.
Top: The color starts to change from the "12 o'clock" position.
Right: The color starts to change from the "3 o'clock" position.
Bottom: The color starts to change from the "6 o'clock" position.
Left: The color starts to change from the "9 o'clock" position.
- 3) Direction
Select either one between "Anticlockwise" and "Clockwise" as the change direction from 2) Start Position.
- 4) Size
Enter a numeric (increment: 1 dot) as the radius of the circle graph displayed.
Available size: 1 to 120 dots (radius)

Screen image

50DU-TK



F940GOT

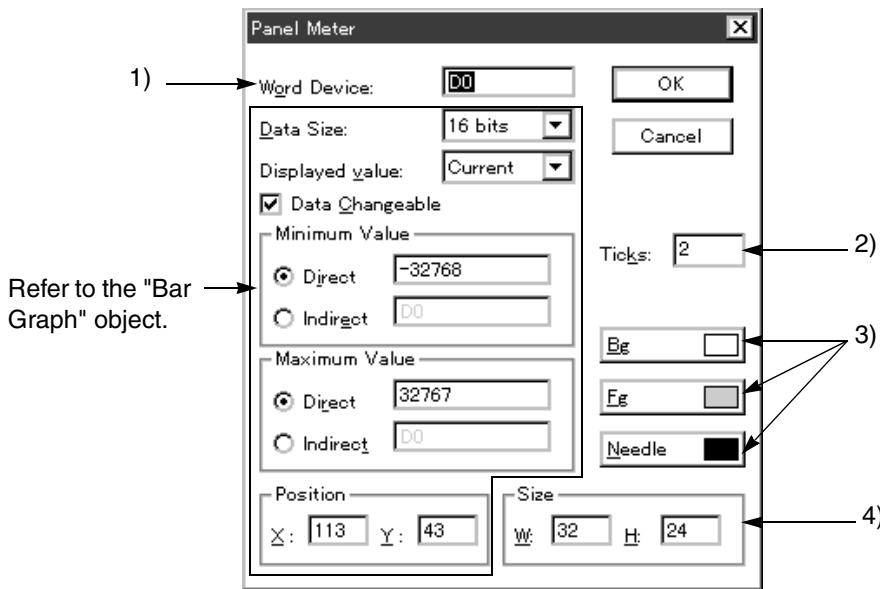


8.3.4 Panel Meter

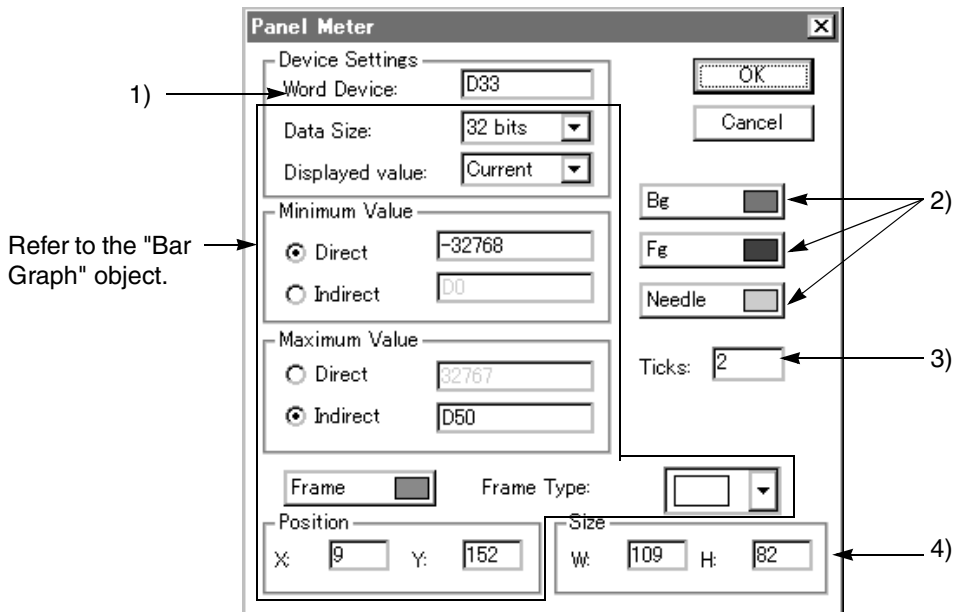
Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Panel Meter" objects displays one specified word device in the PC as the ratio against 100% as the angle of the needle.

50DU-TK



F940GOT



Input items

- 1) Word Device
Enter a word device in the PC to be displayed as the angle of the needle on the panel meter.
- 2) Ticks
Set the number of divisions of the panel meter.

50DU-TK

Available number of divisions: 2 to 10 (divided into equal portions)

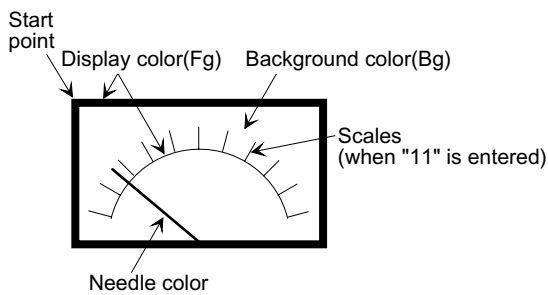
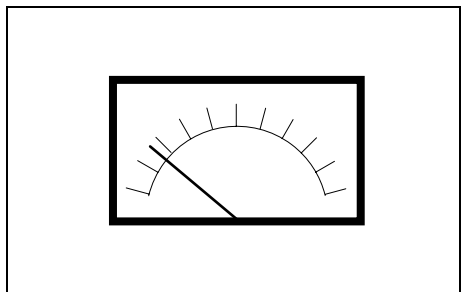
F940GOT

Available number of divisions: 0, 2 to 50 (divided into equal portions)
When "0" is selected, the scale is not displayed.

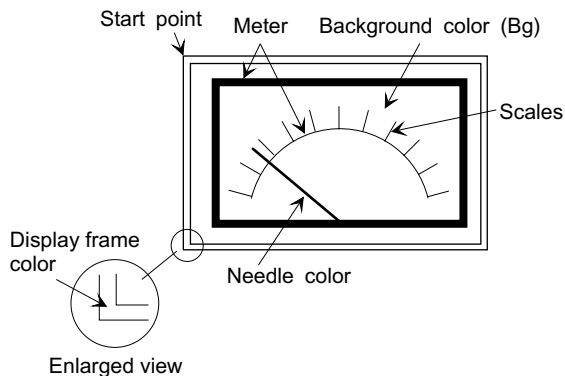
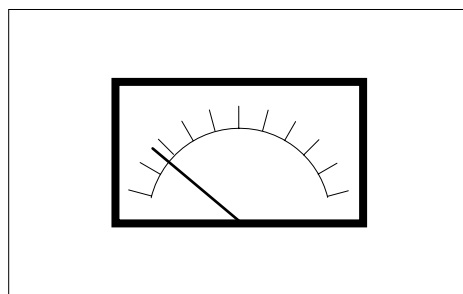
- 3) Bg, Fg (Meter) and Needle
Select the background color, the display color and the needle color respectively from the color pallet. "Fg" is displayed in the 50DU-TK, and "Meter" is displayed in the F940GOT.
- 4) Size
Enter a numeric (increment: 1 dot) to "W" (width) and "H" (height) respectively as the display size.
Available size: 32 × 24 dots ~ 320 × 240 dots (W × H)

Screen image

50DU-TK



F940GOT

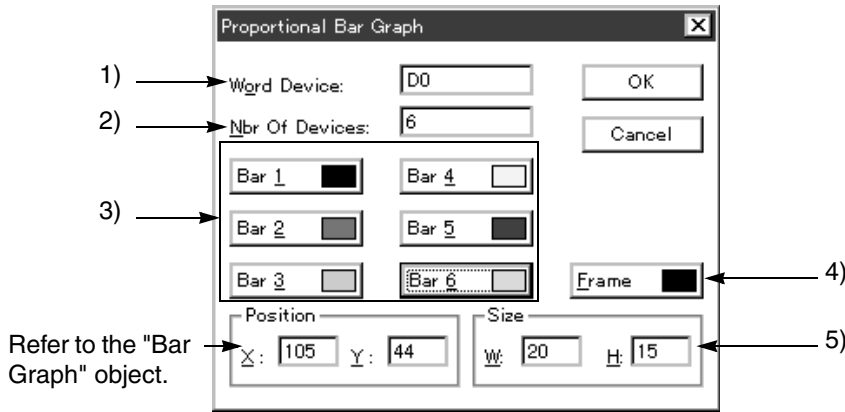


8.3.5 Proportional Bar Graph

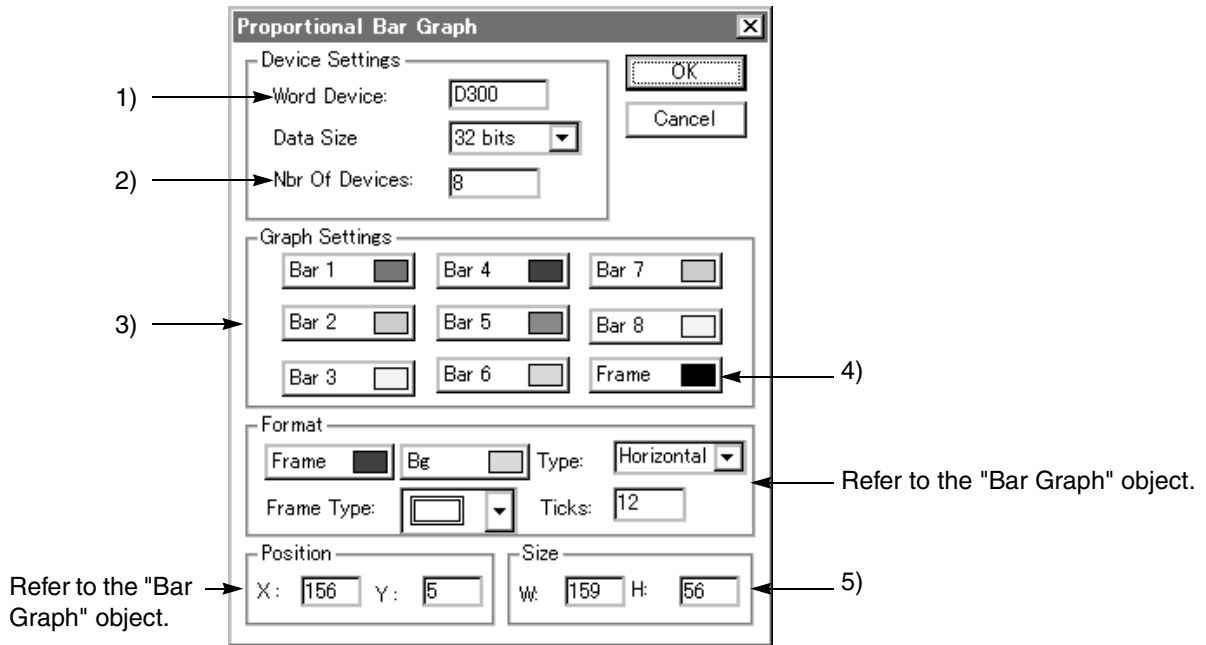
Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Proportional Bar Graph" object displays up to six specified word devices in the PC against the total as the ratio against 100%.

50DU-TK



F940GOT



Input items

- 1) Word Device
Enter the top word device in the PC.
Consecutive word devices from the one specified here as many as the number set in 2) Nbr Of Devices are to be displayed as bar graphs respectively.
A data register (D) exclusively can be entered here.

- 2) Nbr of Devices

50DU-TK

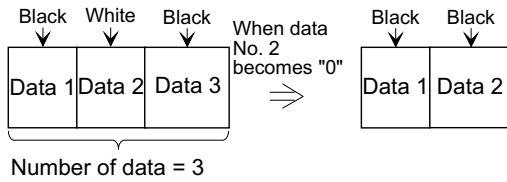
Enter the number of word devices (1 to 6) to be displayed as bar graphs.

F940GOT

Enter the number of word devices (1 to 8) to be displayed as bar graphs.

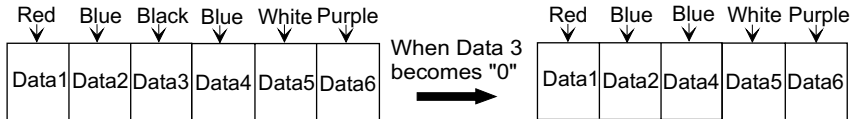
In the case of black-and-white LCD

Enter "2" when the DU type is FX-50DU-TK or F940GOT-LWD (equipped with a black-and-white LCD).
If the value of a word device becomes "0", it is not displayed as a graph and cannot be identified because only two colors (black and white) are available as the data colors.



In the case of color LCD

When the DU type is FX-50DU-TKS or F940GOT-SWD (equipped with a color LCD), make sure that a same color is not used in adjacent area.



- 3) Data color

50DU-TK

Select the level color of Bar 1 to Bar 6 respectively from the color pallet.

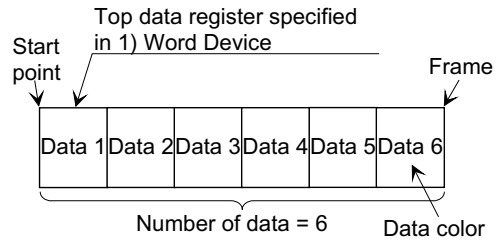
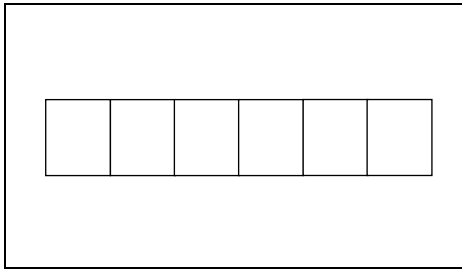
F940GOT

Select the level color of Bar 1 to Bar 8 respectively from the color pallet.

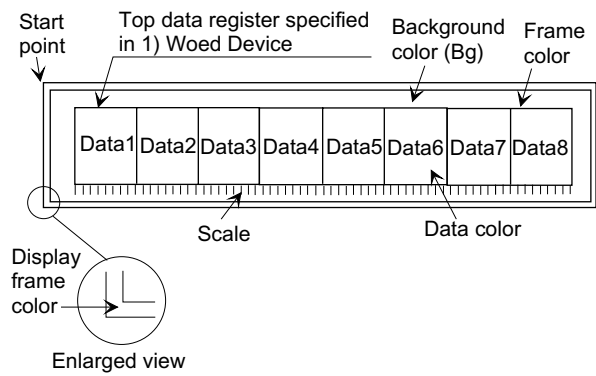
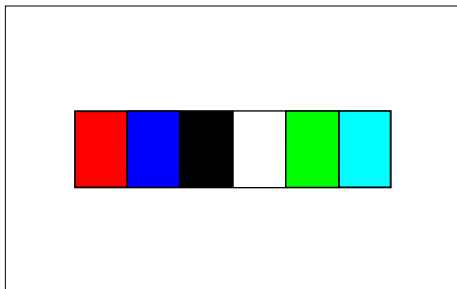
- 4) Frame
Select the frame color of the bar graphs from the color pallet.
- 5) Size
Enter a numeric (increment: 1 dot) to "W" (width) and "H" (height) respectively as the display size.
Available size: 2 × 2 dots ~ 320 × 240 dots (W × H)

Screen image

50DU-TK



F940GOT

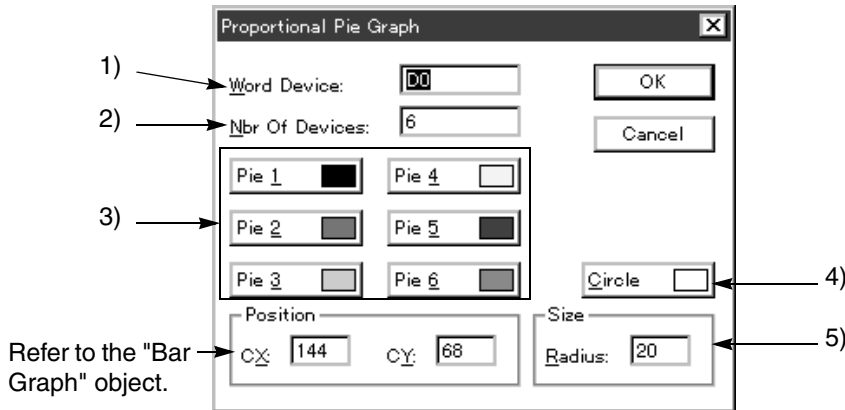


8.3.6 Proportional Pie Graph

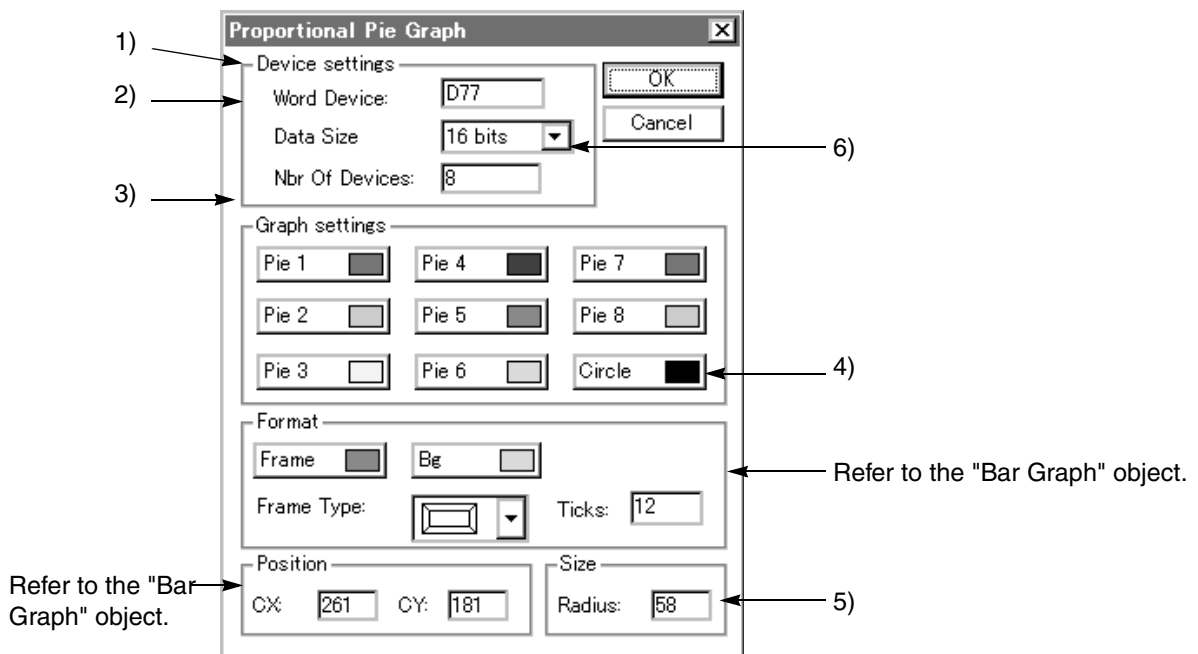
Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Proportional Pie Graph" displays up to six specified word devices in the PC against the total as the ratio against 100%.

50DU-TK



F940GOT



Input items

- 1) Word Device
Enter the top word device in the PC.
Consecutive word devices from the one specified here as many as the number set in 2) Nbr Of Devices are to be displayed as pie graphs respectively.
A data register (D) exclusively can be entered here.

2) Nbr Of Devices

50DU-TK

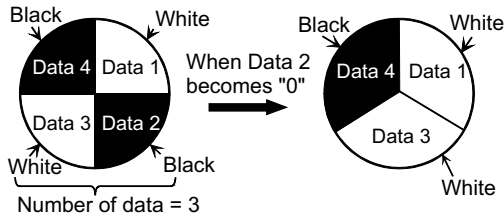
Enter the number of word devices (1 to 6) to be displayed as proportional pie graphs.

F940GOT

Enter the number of word devices (1 to 8) to be displayed as proportional pie graphs.

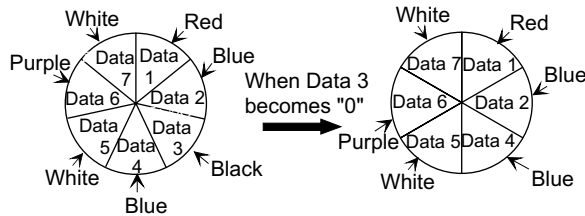
In the case of black-and-white LCD

Enter "2" when the DU type is FX-50DU-TK or F940GOT-LWD (equipped with a black-and-white LCD). If the value of a word device becomes "0", it is not displayed as a graph and cannot be identified because only two colors (black and white) are available as the data colors.



In the case of color LCD

When the DU type is FX-50DU-TKS or F940GOT-SWD (equipped with a color LCD), make sure that a same color is not used in adjacent area. If the value of a word device becomes "0", it is not displayed as a graph and cannot be identified.



3) (Data color)

50DU-TK

Select the level color of Pie 1 to Pie 6 respectively from the color pallet.

F940GOT

Select the level color of Pie 1 to Pie 8 respectively from the color pallet.

4) Frame

Select the frame color of the pie graphs from the color pallet.

5) Size

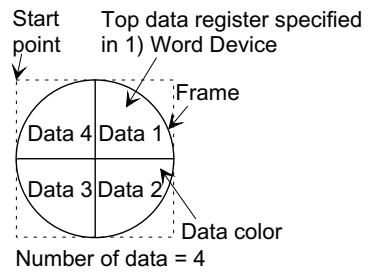
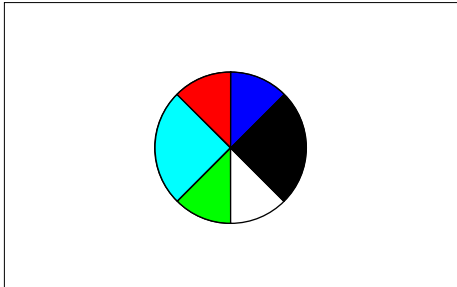
Enter a numeric (increment: 1 dot) as the radius of the pie graphs displayed.
Available size: 1 ~ 120 dots (radius)

6) Data Size

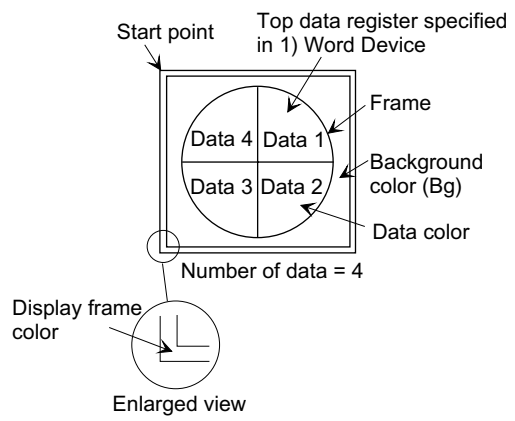
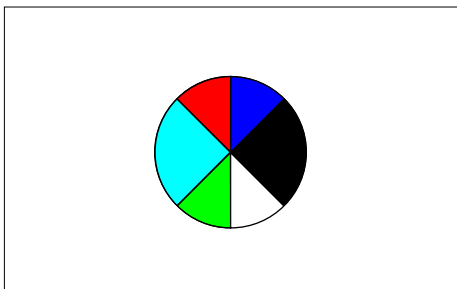
Select the data size of 1) Word Device between "16 bits" and "32 bits".
When a high speed counter or 32-bit counter is set to 1) Word Device, make sure to select "32 bits".

Screen image

50DU-TK



F940GOT



8.3.7 Line Graph

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Line Graph" object displays consecutive word devices in the PC as trend graphs respectively.

Line Graph dialog box

F940GOT

Input items

- 1) Word Device
Enter the head word device No. (T, C, D) of the PLC.
Word devices as many as the number set in "3) Ticks Horizontal" from the head device No. are assigned to No. 1 and later in "5) Shown Devices" respectively.

Assignment of word devices to line graphs (when the data size is 16 bits)

Table:8.11 When "3) Ticks Horizontal" is set to "5"

5) Shown Devices	1) Word Device	5) Shown Devices	1) Word Device
No.1	D+0	No.3	D+10
	D+1		D+11
	D+2		D+12
	D+3		D+13
	D+4		D+14
No.2	D+5	No.4	D+15
	D+6		D+16
	D+7		D+17
	D+8		D+18
	D+9		D+19

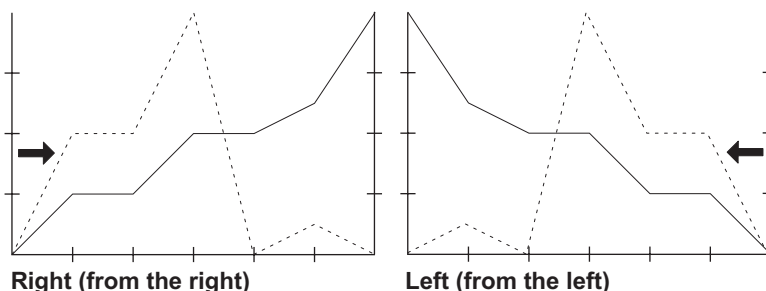
Table:8.12 When "3) Ticks Horizontal" is set to "3"

5) Shown Devices	1) Word Device	5) Shown Devices	1) Word Device
No.1	D+0	No.3	D+6
	D+1		D+7
	D+2		D+8
No.2	D+3	No.4	D+9
	D+4		D+10
	D+5		D+11

The word devices are drawn as line graphs using the data "Number of line graphs (1 to 4) x 3) Ticks Horizontal" (when the data size is 16 bits).

When "7) Data Size" is set to "32 bits", the number of required word devices becomes twice of the above.

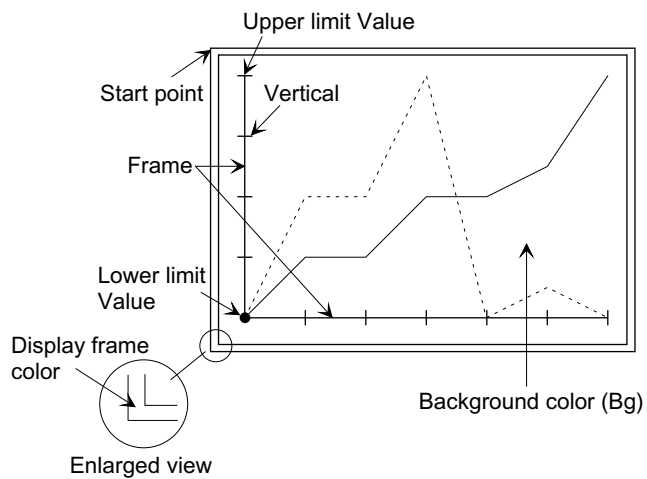
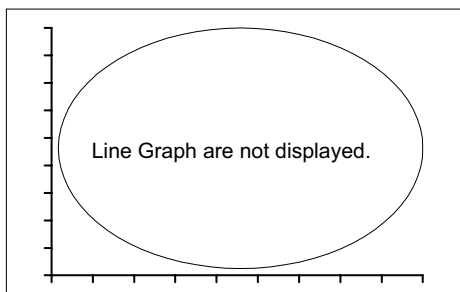
- 2) Minimum Value and Maximum Value
Specify the range in which the data assigned to the word devices specified in 1) Word Device is sampled and displayed in the vertical axis. (When a value exceeds this range, the displayed trend graph is discontinued.)
Direct: Enter a numeric.
7) Data size = 16 bits: -32,768 to +32,767
32 bits: -2,147,483,648 to +2,147,483,647
Indirect: Enter a word device (T, C, D, V or Z) or a data file No.
- 3) Ticks Horizontal and Ticks Vertical
Enter the number of divisions in the horizontal and vertical axes of the graph respectively.
Available number of divisions: 0, 2 to 50 (divided into equal portions)
When "0" is entered, the scale is not displayed.
- 4) Undisplayed Value
When a value of the word device specified in 1) Word Device is equivalent to the input value set here, it is not plotted in the graph.
The available values are in accordance with the size specified in 7) Data Size.
- 5) Shown Devices
Select the number of line graphs to be displayed and the line type ("Unbroken", "Broken", "Dotted" or "Long and short dash") of each graph.
- 6) Frame
Select the frame color of the graph.
- 7) Data Size
"1) Word Device" can be handled as a numeric value of 16 or 32 bits.
For high-speed counters from C200 in the FX Series PLC, select "32 bits".
- 8) Direction
Select the data display start direction.



Screen image

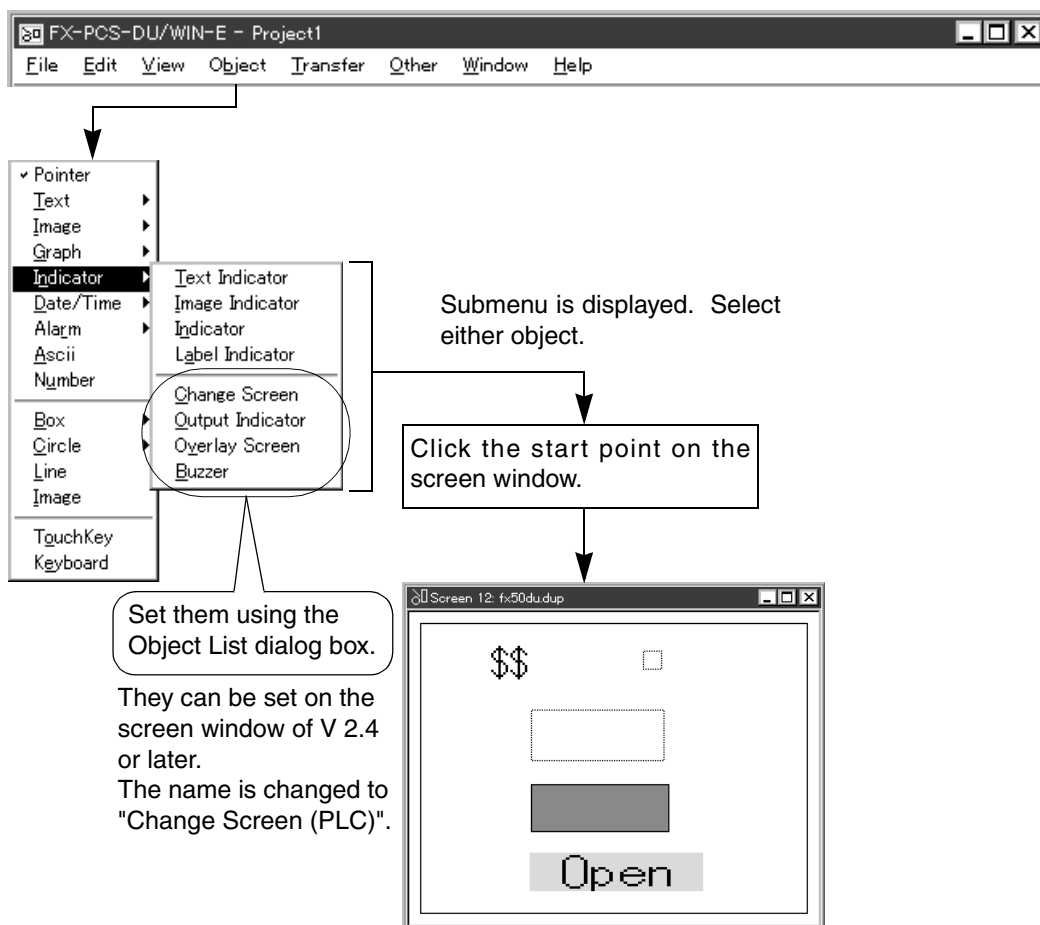
In the F940GOT, the "Trend Graph (Sampling)" object and the "Line Graph" object show a same image.

F940GOT



8.4 Setting indicators (Indicator)

The "Indicator" object allows to change the display contents in accordance with the ON/OFF operation of a bit device in the PC.



Description on the objects

- | | |
|---|---|
| Text indicator | [10DU] [25DU] [50DU-TK] [F940GOT] |
| Changes over the display of two character strings taken from the text library in the specified size on the screen in accordance with the ON/OFF status of the specified bit device. | |
| Image indicator | [50DU-TK] [F940GOT] |
| Changes over the display of two graphics taken from the image library in accordance with the ON/OFF status of the specified bit device. | |
| Indicator | [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT] |
| Highlights a rectangle in the specified size on the screen. | |
| Label indicator | [50DU-TK] [F940GOT] |
| Displays an indicator in which a character string (label) to be displayed is shown inside the indicator frame. | |
| Change screen | [50DU-TK] [F940GOT] |
| Changes over the screen in accordance with the control by the PC. | |
| Output indicator | [40DU 40DU-TK] [F940GOT] |
| Turns on/off an external output signal on the rear panel of the DU. | |
| Overlay screen | [50DU-TK] [F940GOT] |
| Superimposes the specified screen No. when the specified bit device is turned on. | |
| Buzzer | [50DU-TK] [F940GOT] |
| Issues the buzzer sound built in the DU once, three times or continuously. | |

8.4.1 Text indicator

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Text Indicator" object allows to change over the display of two texts registered in the text library by specifying a No. corresponding to a text to be displayed in accordance with the ON/OFF status of the specified bit device in the PC.

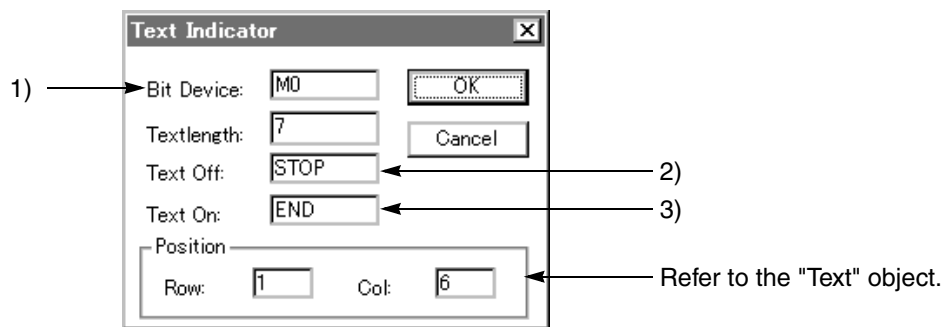
In the F940GOT, "Text Off" and "Text On" can be directly entered without using the text library.

Texts to be displayed (set) by the "Text Indicator" object should be preliminarily registered in "Text Library" offered on the "View" menu bar.

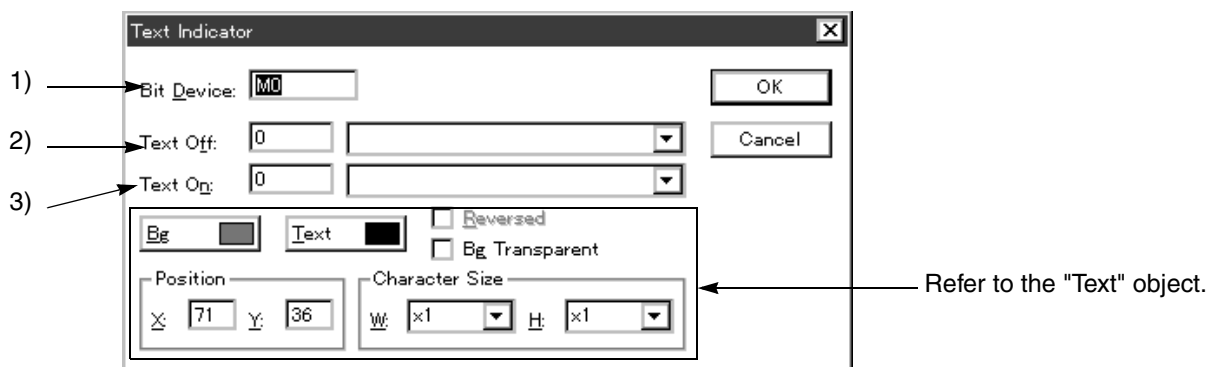
In the 10DU, however, texts are not required to be registered preliminarily in "Text Library": They can be directly entered on the dialog box.

Text indicator dialog box

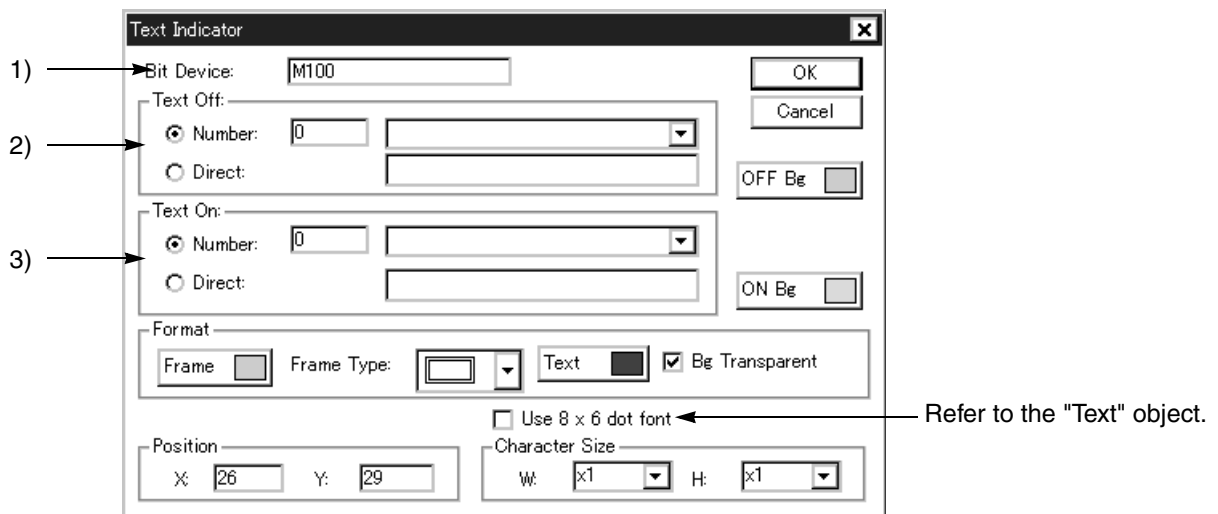
10DU



25DU and 50DU-TK



F940GOT



Input items

- 1) Bit Device
Enter a bit device in the PC which turns on/off the "Text Indicator" object.
- 2) Text Off

10DU

Specify the text to be displayed while the bit device specified in 1) Bit Device is turned off by entering up to 7 characters. Available characters are only half-width alphabets, numerics and Katakana.

25DU and 50DU-TK

Specify the text to be displayed while the bit device specified in 1) Bit Device is turned off by entering a desired No. contained in the text library or by selecting a desired one from the list.

F940GOT

Select "No." or "Direct" at first to set whether a desired No. in the text library is to be entered or a desired text is to be entered. In addition, the background color in the OFF status can be specified.

No.:Specify the text to be displayed while the bit device specified in 1) Bit Device is turned off by entering a desired No. contained in the text library or by selecting a desired one from the list.

Direct:Specify the text to be displayed while the bit device specified in 1) Bit Device is turned off by entering up to 40 half-width characters or 20 full-width characters.

- 3) Text On

10DU

Specify the text to be displayed while the bit device specified in 1) Bit Device is turned on by entering up to 7 characters. Available characters are only half-width alphabets, numerics and Katakana.

25DU and 50DU-TK

Specify the text to be displayed while the bit device specified in 1) Bit Device is turned on by entering a desired No. contained in the text library or by selecting a desired one from the list.

F940GOT

Select "No." or "Direct" at first to set whether a desired No. in the text library is to be entered or a desired text is to be entered. In addition, the background color in the ON status can be specified.

No.:Specify the text to be displayed while the bit device specified in 1) Bit Device is turned on by entering a desired No. contained in the text library or by selecting a desired one from the list.

Direct:Specify the text to be displayed while the bit device specified in 1) Bit Device is turned on by entering up to 40 half-width characters or 20 full-width characters.

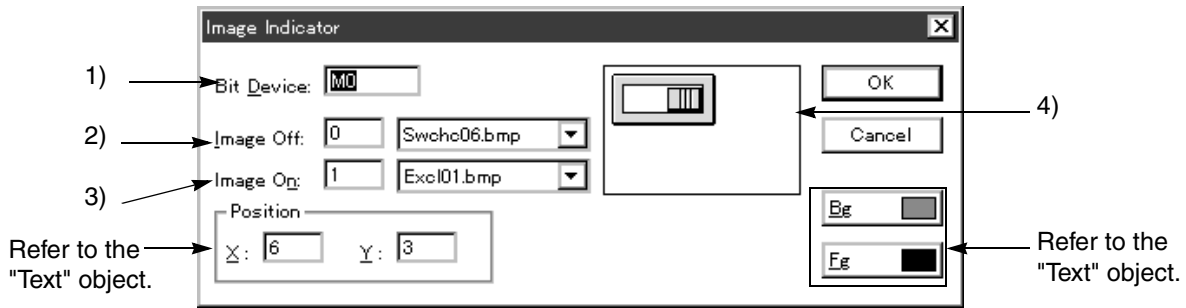
8.4.2 Image indicator

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Image indicator" object allows to change over the display of two graphics registered in the image library by specifying a No. corresponding to a graphic to be displayed in accordance with the ON/OFF status of the specified bit device in the PC.

Graphics to be displayed (set) by the "Image indicator" object should be preliminarily registered in "Image Library" offered on the "View" menu bar.

Image indicator dialog box

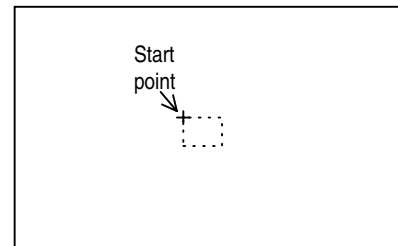


Input items

- 1) Bit Device
Enter a bit device in the PC which turns on/off the graphic.
- 2) Image OFF
Specify the graphic to be displayed while the bit device specified in 1) Bit Device is turned off by entering a desired No. contained in the image library or by selecting a desired one from the list.
- 3) Image ON
Specify the graphic to be displayed while the bit device specified in 1) Bit Device is turned on by entering a desired No. contained in the image library or by selecting a desired one from the list.
- 4) Graphic display
The graphic selected in 2) Image OFF or 3) Image ON is displayed so that its size, shape and color can be confirmed.

Screen image

The graphic specified in 2) Image OFF or 3) Image OFF is displayed while the specified start point is regarded as the upper left corner. When a library No. in which no graphics are registered is specified, an area of 16 x 16 dots is temporarily secured.

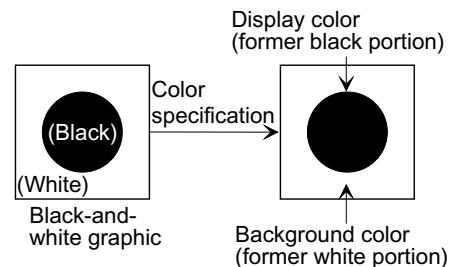


Caution on specification of the graphic color

Graphics are classified into multi-color type and black-and-white type. Specification of the background color and the display color is valid for black-and-white graphics exclusively. (This color specification is enabled exclusively in the DU type in which color display is available.)

[Graphic type]

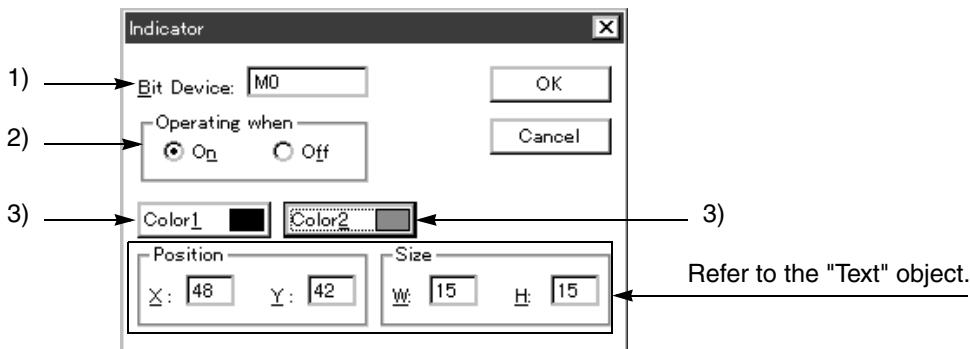
- Multi-color type
Color specification is invalid because the color of the graphic itself has the priority.
- Black-and-white type
The color specification is valid as shown in the figure (exclusively in the DU type in which color display is available.)
In the F940GOT, "Indicator" objects can be overlaid on the screen.



8.4.3 Indicator

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

When a color within the preset indicator area becomes equivalent to a specified color by turning on/off of the specified bit device in the PC, the "Indicator" object allows to replace such a color within the preset indicator area with the other specified color.

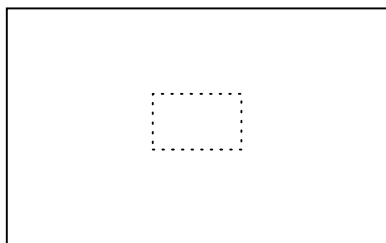


Input items

- 1) Bit Device
Enter a bit device in the PC which turns on/off the indicator.
- 2) Operating when
Specify the logic to replace the display color by "ON" or "OFF" of the bit device specified in 1) Bit Device.
- 3) Color 1 and Color 2
The "Indicator" object replaces a color (including character color, line color, rectangle color, circle color and background color of entire screen) within the indicator area which has become equivalent to "Color 1" or "Color 2" with "Color 2" or "Color 1" respectively.

Screen image

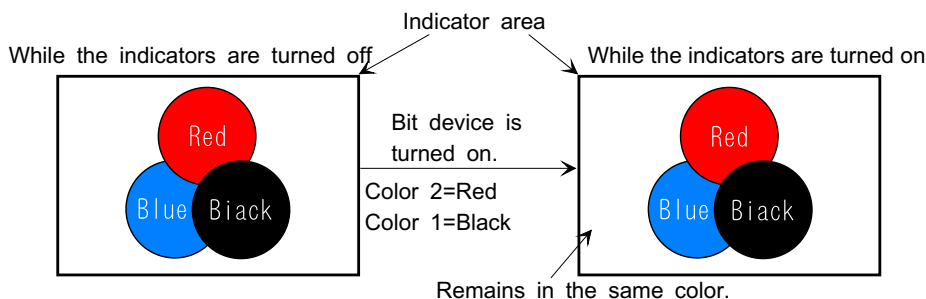
The preset indicator area is secured by dotted line of "Color 1".



Rule of replacing colors when the indicator is turned on

Objects in the DU are displayed in the order of creation. The first object is located at the bottom. When the indicator created at first (located at the bottom) is turned on, a color equivalent to "Color 1" or "Color 2" within the indicator area is replaced by the unit of dot. When an other indicator is located above the first indicator, color is replaced in the upper indicator in accordance with color replacement in the lower indicator.

In an example below, the color equivalent to "Color 2" (= red) is replaced with the color specified as "Color 1" (= black). The color equivalent to "Color 1" (= black) is replaced with the color specified as "Color 2" (= red).



8.4.4 Label indicator

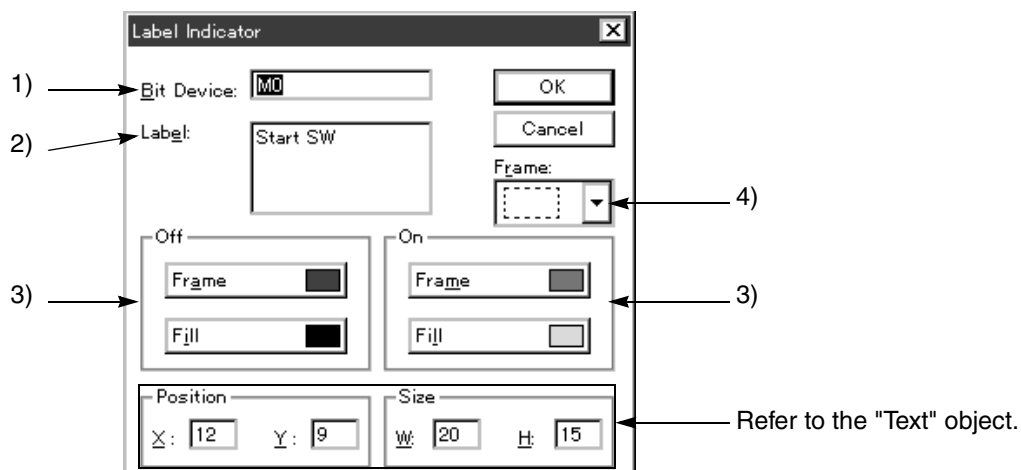
Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Label indicator" object allows to replace the preset indicator area color and the preset label character color with the specified colors respectively in accordance with the ON/OFF status of the specified bit device in the PC.

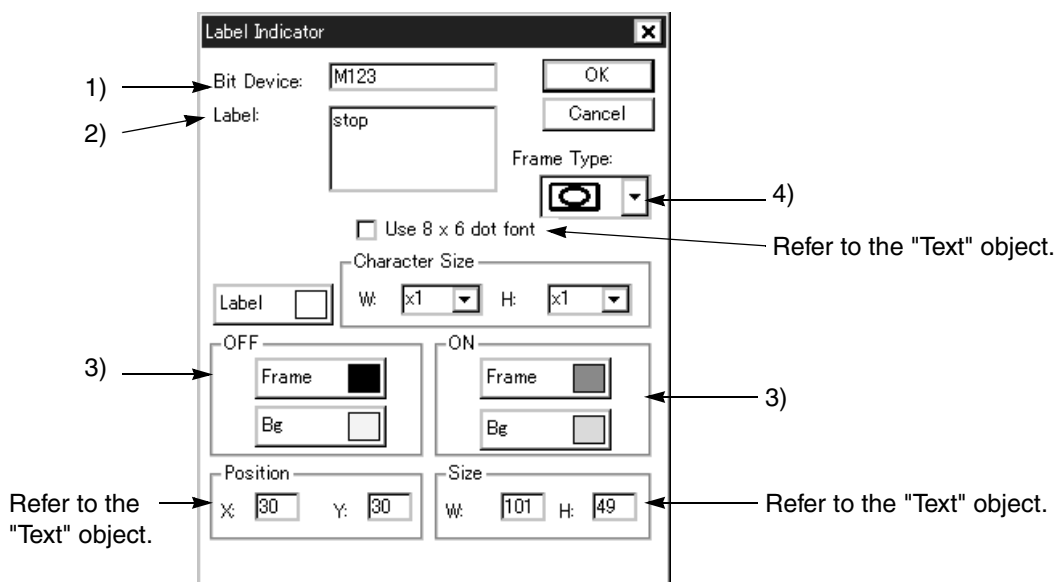
For the conversion rule, refer to "8.4.3 Indicator".

Label indicator setting dialog box

50DU-TK



F940GOT



Input items

- 1) Bit Device
Enter a bit device in the PC which turns on/off the indicator.

- 2) Label
Enter a character string (label) to be displayed inside the indicator frame.
For the character string display position, refer to the note below.

50DU-TK

The character size is "x1/1 width".



F940GOT

The character size is equivalent to that of the "Text" object.
W (width): x1, x2, x3 and x4 are available.
H (height): x0.5, x1, x2, x3 and x4 are available.

- 3) On and Off
Color with which the device of the No. specified in 1) Bit Device paints over the area specified by the indicator in accordance with the ON/OFF status and the color set in 2) Label.
- 4) Frame
Select the indicator frame shape.





50DU-TK

Table:8.13

Display form		
	No frame	Shaded

F940GOT

Table:8.14

Display form				
	No frame	Single frame	Double frame (circle and rectangle)	Double frame (shaded solid)

The following frame shapes are added.




Ver2.3~ ▶

Label Indicator (The number of available frame shapes is increased from 4 to 7.)
The additional frame shapes are available in the OS version of the GOT-F900 shown in the table below.

Table:8.15

	OS version
F930GOT	V 2.0 or later
F940GOT ET-940	V 3.10 or later

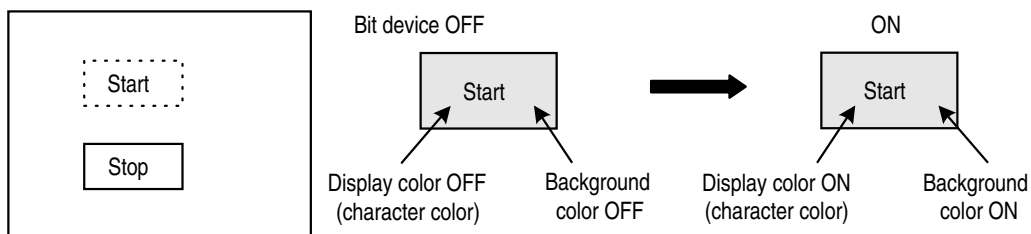
Table:8.16

Display form			
	Pushbutton switch 1	Pushbutton switch 2	Circle frame

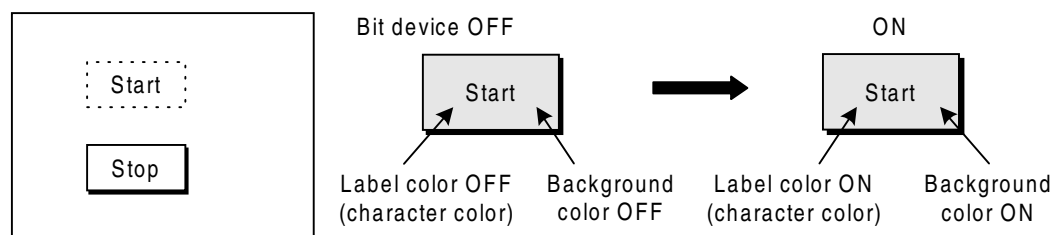
* If the OS version is former than that shown above, the top frame is displayed.

Screen image

50DU-TK

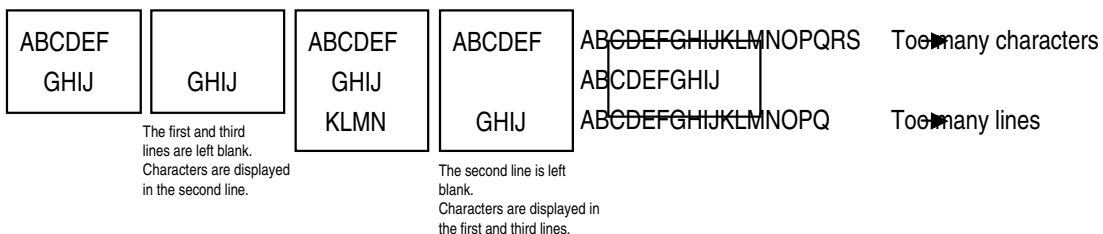


F940GOT



Label display position

A label can be displayed in up to 3 lines. Only 1 line can be specified. Characters are automatically arranged so that they are displayed in the center.



When the number of lines or characters of a label exceeds the specified indicator size, excessive characters are displayed outside the indicator area. Enlarge the indicator size or change the characters of the label to be displayed.

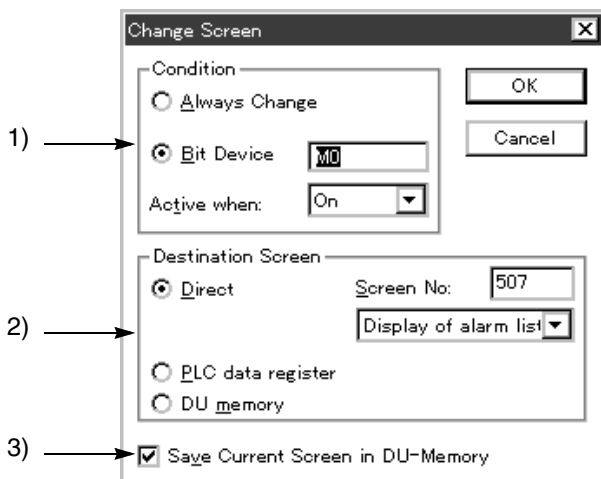
8.4.5 Change screen

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Change screen" object allows to change over the screen in accordance with the instruction from the PC without regard to the keys (mechanical keys on the keyboard and touch keys on the screen).

Set the change screen function on the common screen when screens are to be always changed over from the PC.

Change screen setting dialog box



Ver2.4~▶ The object name is changed from "Change Screen" to "Change Screen (by PLC)", and the object can be selected from the screen window also.

Input items

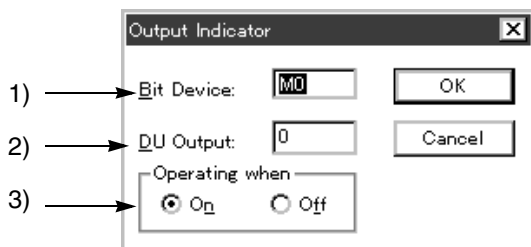
- 1) Condition
 Changes over the screen in accordance with the condition of the specified bit device in the PC.
 Control input: Select this item when a bit device in the PC is not used as the condition.
 Bit Device: Specify a bit device in the PC.
 Operating when: Select "ON" or "OFF" when a bit device is specified.
- 2) Destination screen
 Select the destination screen specification method used when 1) Condition is satisfied.
 Direct: Enter a numeric as the destination user screen No. within the range from 0 to the maximum number of screens minus 1 or as the destination system screen (500 or larger in the 50DU-TK). Or select the destination screen from the list displayed on the drop-down screen.
 PLC data register: Specify a data register in the PLC as the control device for screen changeover (indirect specification).
 In other words, the destination screen No. can be specified in a program in the PLC.
 DU memory: When this item is selected, the screen is changed over to the screen No. stored in a previously displayed screen. (The screen No. displayed in the DU memory is stored.)
- 3) Save Current Screen in DU-Memory
 When a check mark is displayed, a screen stored previously is displayed if 2) Destination Screen is set to "DU Memory" on a screen displayed after the current screen No. is stored.

8.4.6 Output Indicator

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Output Indicator" object allows to control the ON/OFF status of the output from the external I/O connector provided on the rear panel of the DU.

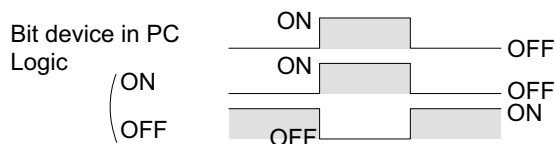
Output Indicator setting dialog box



Ver2.4~ The object can be selected from the screen window also.

Input items

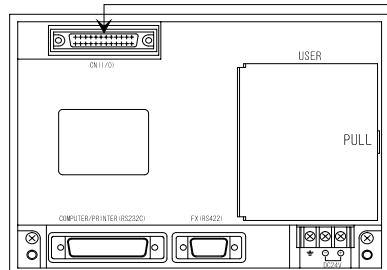
- 1) Bit Device
Specify a bit device in the DU which turns on/off the external output.
- 2) DU Output
Specify the external output No. (0 to 7).
The "Output Indicator" object becomes effective when the registered screen No. is displayed on the DU. While an unregistered screen is displayed, the external output does not change.
- 3) Operating when
Select the logic for the bit device in the PC specified in 1) Bit Device.



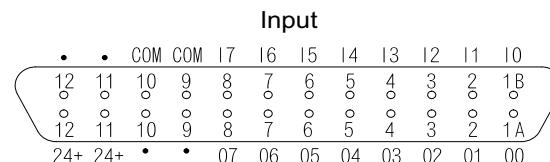
External I/O connector in the DU

(For the I/O specifications and the details, refer to the hardware manual of the DU.)

FX-40DU-ES
FX-40DU-TK-E rear panel



External I/O connector pin layout (main body side)



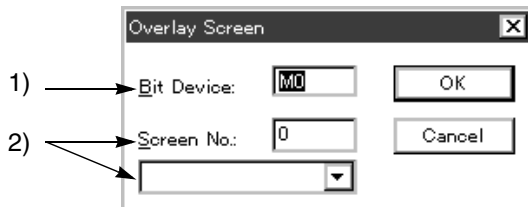
Example: Output destination (external)

8.4.7 Setting "Overlay Screen"

Screen List Window			
Screen	Objects	Keys	Header
	✓		

The "Overlay Screen" object allows to overlay the specified screen on the screen currently displayed on the DU when the specified bit device in the PC is turned on.

Overlay Screen setting dialog box



Ver2.4~▶ The object can be selected from the screen window also.

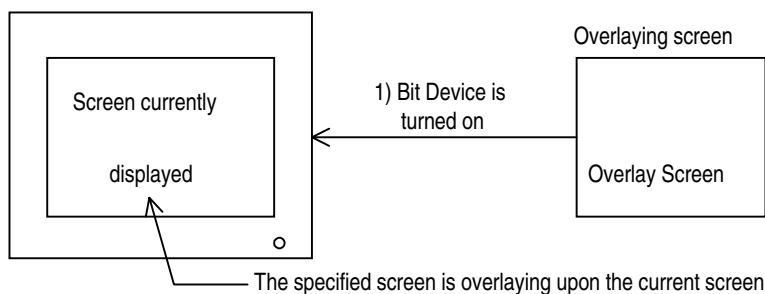
Input items

- 1) Bit Device
Specify a bit device in the PC to execute overlay.
- 2) Screen No.
Enter a screen No. overlaying on the screen currently displayed when the 1) Bit Device is turned on. Or select the overlaying screen from the screen name list. System screens cannot be specified in the 50DU-TK (the screen No. 500 and later) and the F940GOT (the screen No. 1001 and later).



Rule on overlay display

- The "Overlay Screen" object allows to overlay the specified screen on the screen currently displayed in the DU or the F940GOT when 1) Bit Device becomes ON.

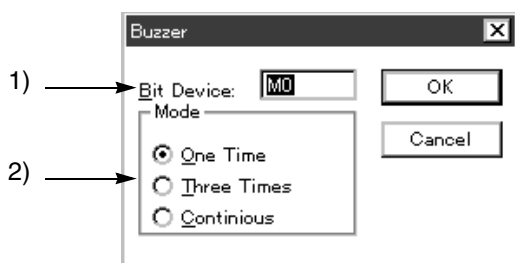


- Up to 3 screens can be overlaid including the one currently displayed. If overlay using a control device is performed, any screen cannot be overlaid.
- All the objects arranged on overlaid screens are valid. Accordingly, when touch keys are overlaid, for example, one on the overlaying screen (top screen) has the priority.

8.4.8 Buzzer

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

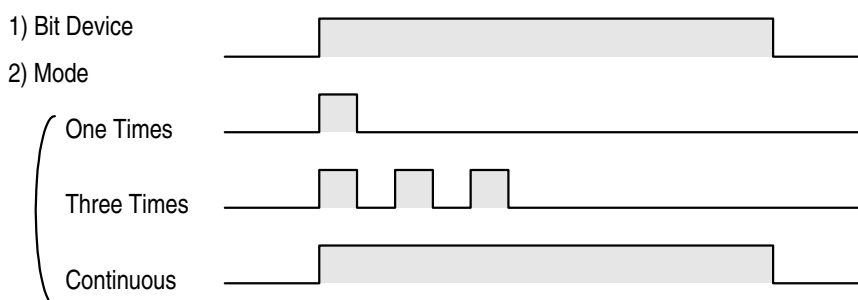
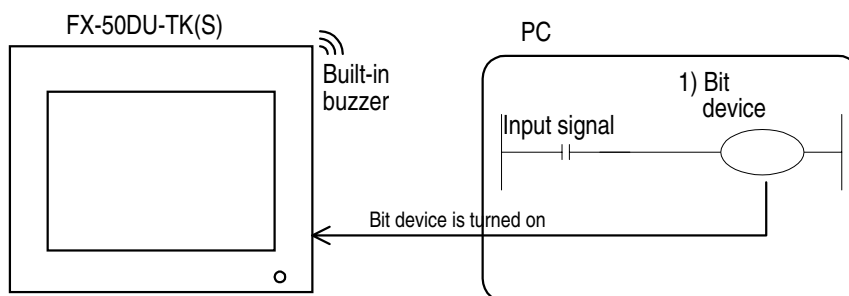
The "Buzzer" object allows to issue the buzzer sound built in the DU in accordance with the ON/OFF status of a bit device in the PC.



Ver2.4~▶ The object can be selected from the screen window also.

Input items

- 1) Bit Device
Enter a bit device in the PC to turn on/off the buzzer.
- 2) Mode
Select how the buzzer sound built in the DU is issued when the bit device specified in 1) Bit Device is turned on.
"Continuous" is available in the FX-50DU-TK(S) version 2.00 or later.

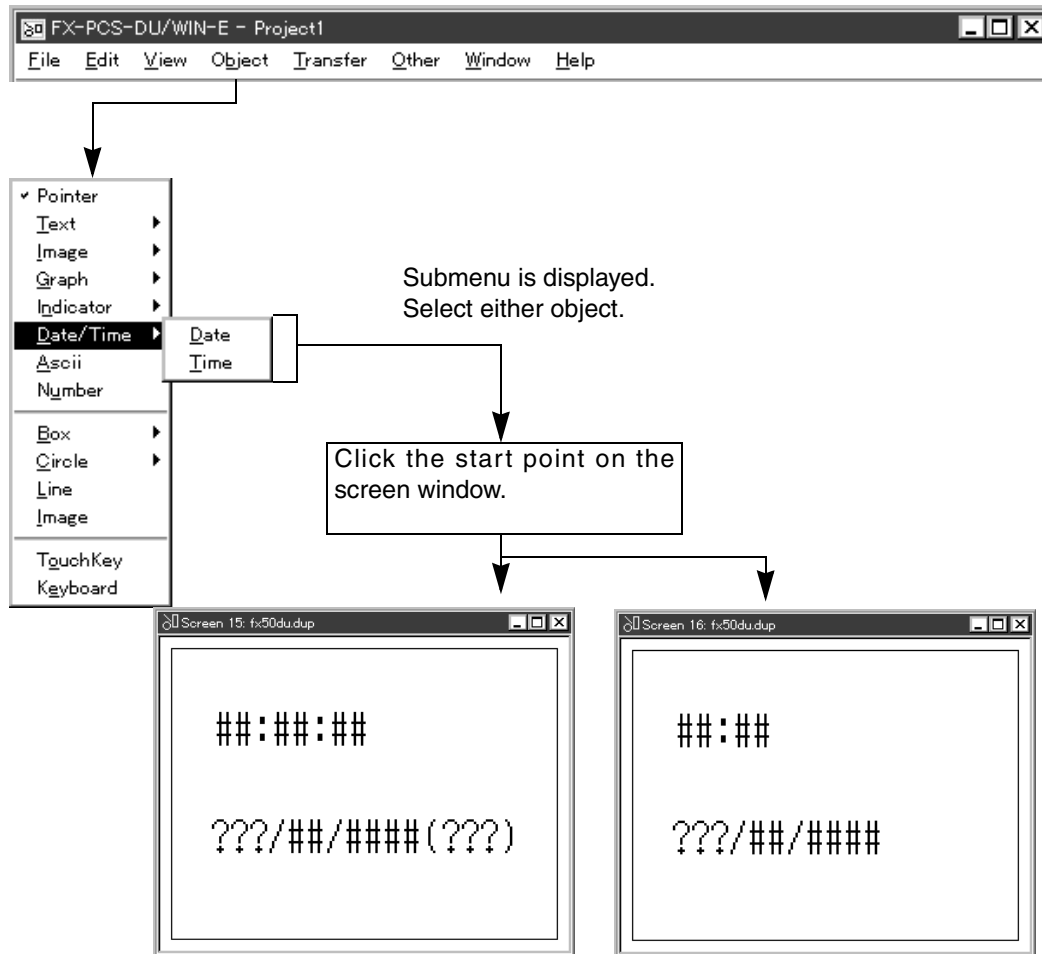


When the buzzer sound is not issued

- If the buzzer is set to "OFF" on the dialog box displayed when "View", "System Settings" and "Setup Data" are selected, the buzzer sound is not issued without regard to any other operation or setting.
- The buzzer function is valid while a screen (except a common screen) on which the buzzer function is set is displayed. When another screen is displayed, the buzzer sound is not issued if the buzzer function is not set on that screen.

8.5 Setting the date/time display (Date/Time)

The "Date/Time" object allows to display the contents of the calendar/clock function built in the DU on the screen.



Description on the objects

Date [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
 The current year, month and day (day of the week) are displayed on the DU screen based on the calendar built in the DU.

Time [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
 The current hour and minute (second) are displayed on the DU screen based on the clock built in the DU.



Cautions on FX-25DU-E

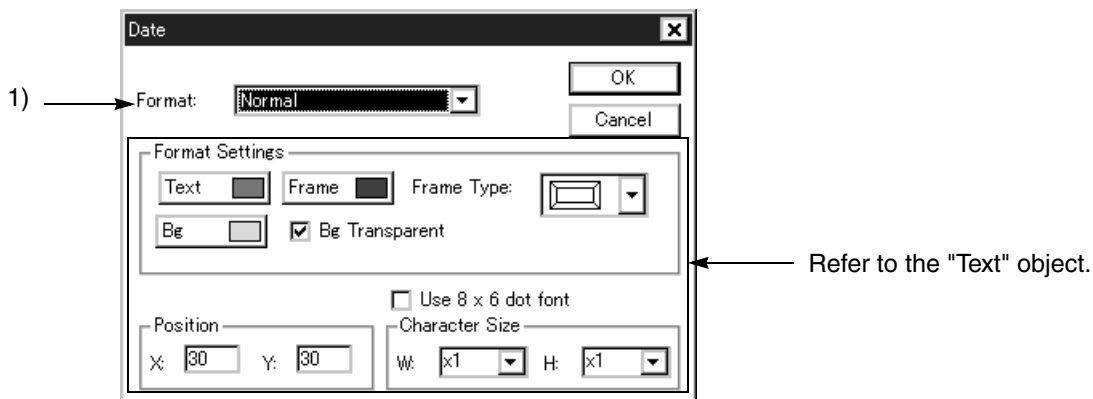
The calendar/clock function is not built in the FX-25DU-E. However, when a real-time clock cassette (offered as an option) is attached to the FX-25DU-E, the date and the time can be read to and displayed in the FX-25DU-E. (The real-time clock cassette is not required in the FX_{2N} Series PLC in which the calendar/clock function is built in.) Have in mind that the real-time clock cassette is not available in the FX-25DU-P.

8.5.1 Date

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Date" object allows to display the current year, month and day on the screen based on the calendar built in the DU.

Date setting dialog box



Input items

- 1) Format
Select the date display format.

Table:8.17

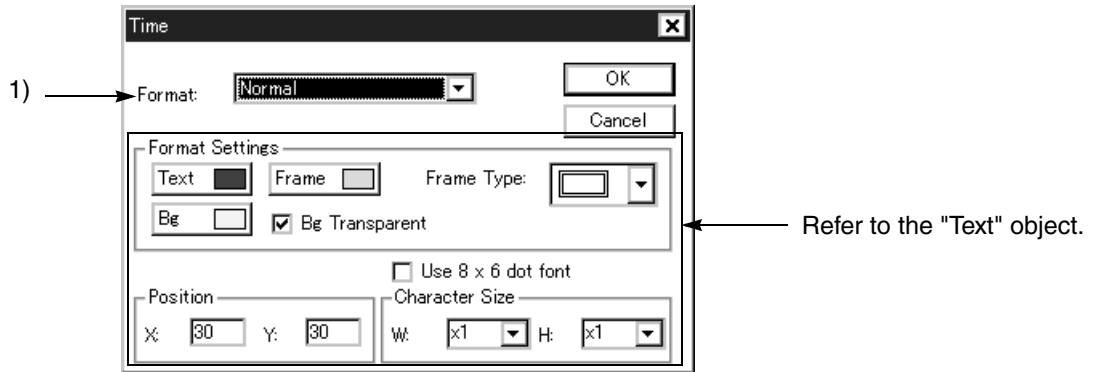
Format	Display on screen	Display on DU screen (example)
Normal	##/??#/####(??)	31/DEC/1998(MON)
Short	##/??#/####	31/DEC/1998
Normal (Japanese)	####年##月##日(?)	1998年12月31日(月)
Short (Japanese)	####年##月##日	1998年12月31日

8.5.2 Time

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Time" object allows to display the current hour, minute and second on the screen based on the clock built in the DU.

Time setting dialog box



Input items

- 1) Format
Select the time display format.

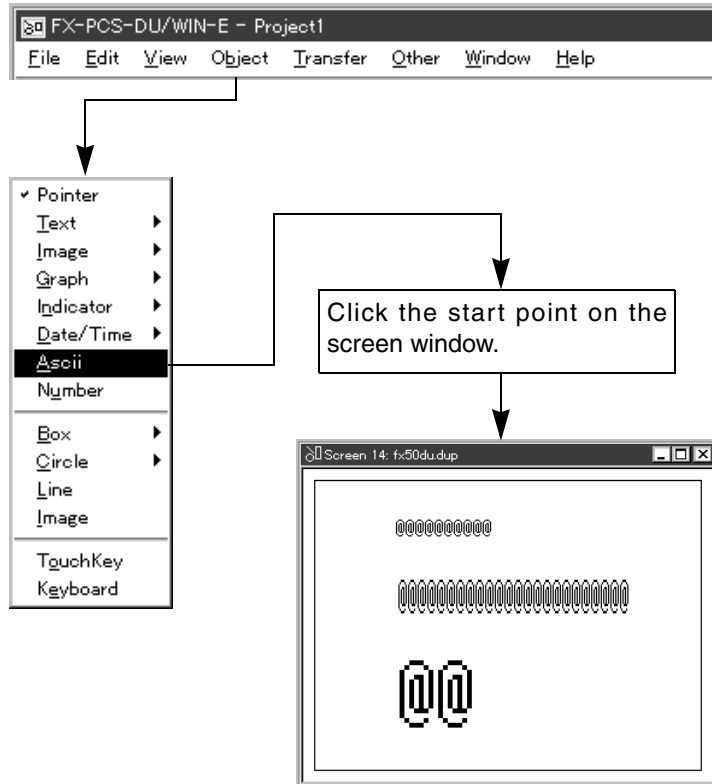
Table:8.18

Format	Display on screen	Display on DU screen (example)
Normal	## : ## : ##	12:30:45
Short	## : ##	12:30
Normal (Japanese)	##時##分##秒	12時30分45秒
Short (Japanese)	##時##分	12時30分

8.6 Setting the character code (Ascii)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Ascii" object allows to display the character code specified by a word device in the PC as a character.



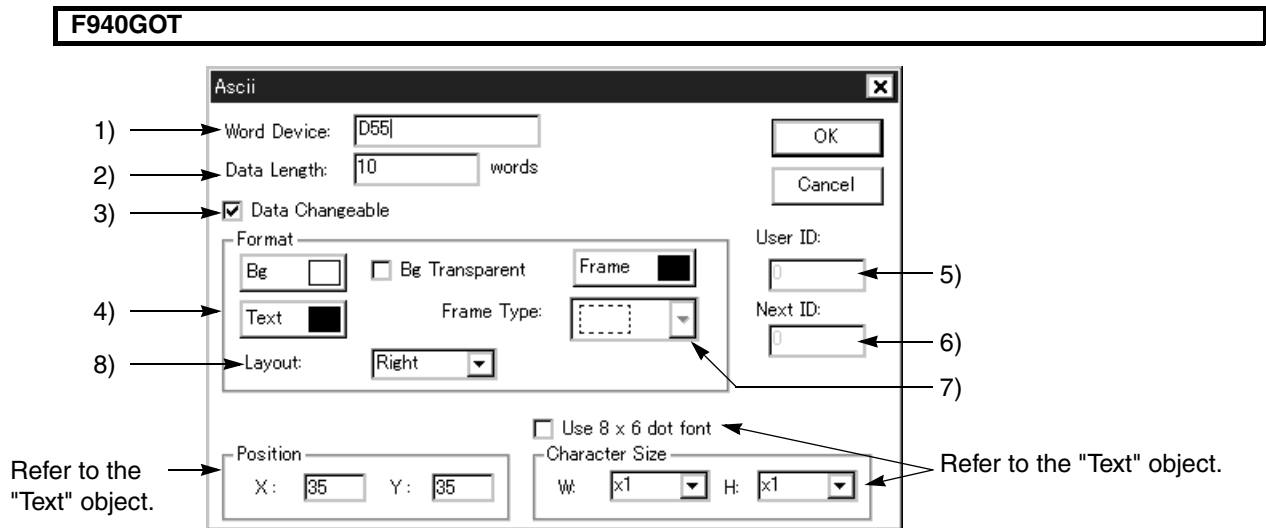
Description on the object

Ascii [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
 Displays a character to be displayed on the DU as a character corresponding to an ASCII code specified by a word device in the PC.

Character code setting dialog box

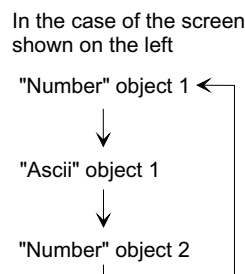
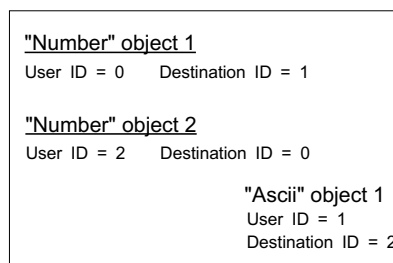
25DU, 30DU, 40DU, 40DU-TK and 50DU-TK





Input items

- 1) **Word Device**
Enter the head of a word device to specify a character code. Consecutive word devices as many as the number of words entered to 2) Data Length are occupied.
- 2) **Data Length**
Enter the number of characters to be displayed on the screen. Available data length: 1 to 12 words (1 word corresponds to 1 full-width character or 2 half-width characters.)
- 3) **Data Changeable**
Set this item effective by adding a check mark to change the character code using the keyboard (characters 1 and 2) or to display the frame type.
Caution on display in the F940GOT
When "Data Changeable" in the "Number" object and the "Text" object is set effective with a check mark, the function "Touch Key object + Data Setting object" is added to each of the "Number" and "Text" objects.
In the 50DU-TK and the 40DU-TK, however, the "Touch Key" object and the "Data Setting" object should be set for each of the "Number" and "Text" objects in the conventional way.
When the pop-up keyboard is changed in the F940GOT, the "Touch Key" object and the "Data Setting" object should be set also.
- 4) **Bg, Text and Frame Type**
Select the background color, the text color and the frame type color respectively from the color pallet.
- 5) **User ID**
This is an ID No. (0 to 49) which notifies the PC of the selected object when two or more "Number" or "Ascii" objects are displayed and their values are tried to be changed using the keyboard. The user ID is automatically assigned from 0.
The value specified in 5) User ID is written to a word device in the PC corresponding to the control device (D + 7) for the selected object.
The user ID is automatically set as a next ID by 6) Next ID.
- 6) **Next ID**
This item sets automatically the user ID of the "Number" object or the "Ascii" object to be selected after the object currently being changed on the screen.



Handling of 5) User ID and 6) Next ID

In the DU/WIN software

The ID No. cannot be entered or changed.

When a "Number" or "Ascii" object is created at first, the user ID is automatically set to "0" and the next ID is automatically set to "0".

For a "Number" or "Ascii" object created next, the user ID is automatically set to "1" (+1) and the next ID is automatically set to "0" (head No.) so that selection is looped.

When a "Number" or "Ascii" object is added or deleted while two or more "Number" or "Ascii" objects are displayed, the user ID and the next ID are automatically assigned again (so that unused ID Nos. are not generated).

Ver2.3~ ▶

In the conventional version, "User ID" and "Next ID" are automatically assigned.

In the new version, they can be set manually using the following setting procedure:

To set automatic assignment, click to check the check box located on the left side of "Auto User ID & Next ID" on the window.

To set manual assignment, click to uncheck the check box.

This setting is stored even after the DU/WIN-E is terminated once and started up again.

To change the selection order

The list of objects created on the Object List window is displayed.





Drag an object whose selection order is to be changed, and drop it in a desired destination using the mouse.

For the details, refer to "5.2.7 Adding, deleting and sorting objects (Object List)".

7) Frame Type

Select the form of a frame displayed around the ascii.

Table:8.19

Display form				
	No frame	Single frame	Double frame (keyboard)	Double frame (trimmed)

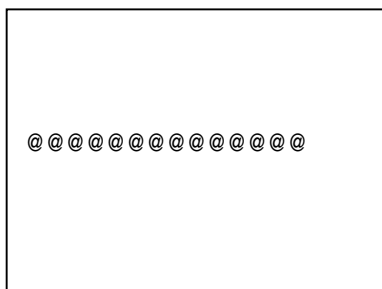
* "No frame" is displayed in dotted line in the DU/WIN-E software, and is not displayed in the DU and the F940GOT.

Ver2.4~ ▶

8) Layout

Select to which position the displayed number is laid out.

Screen image

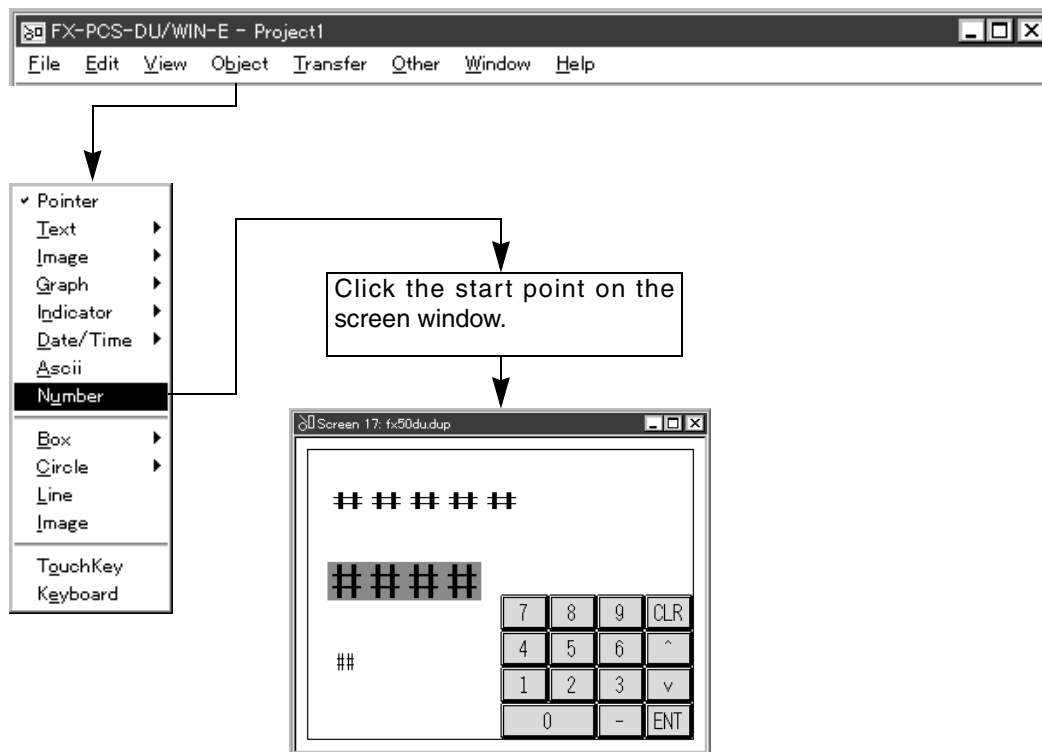


@ =1 half width character

8.7 Setting the numeric (Number)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Number" object allows to display the value of the specified word device in the PC in the specified size and position.

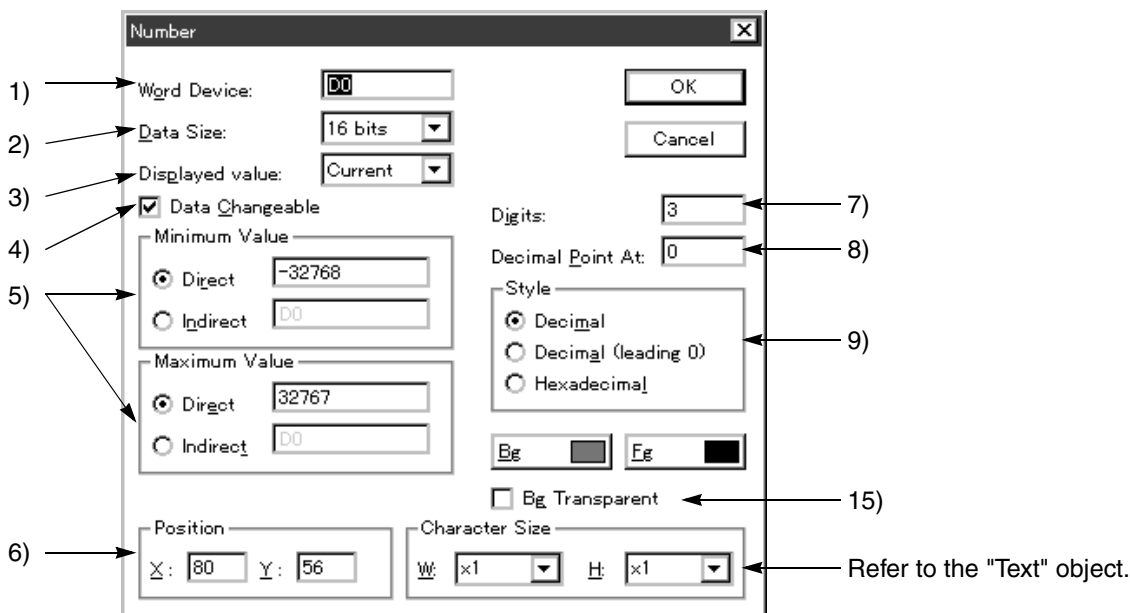


Description on the object

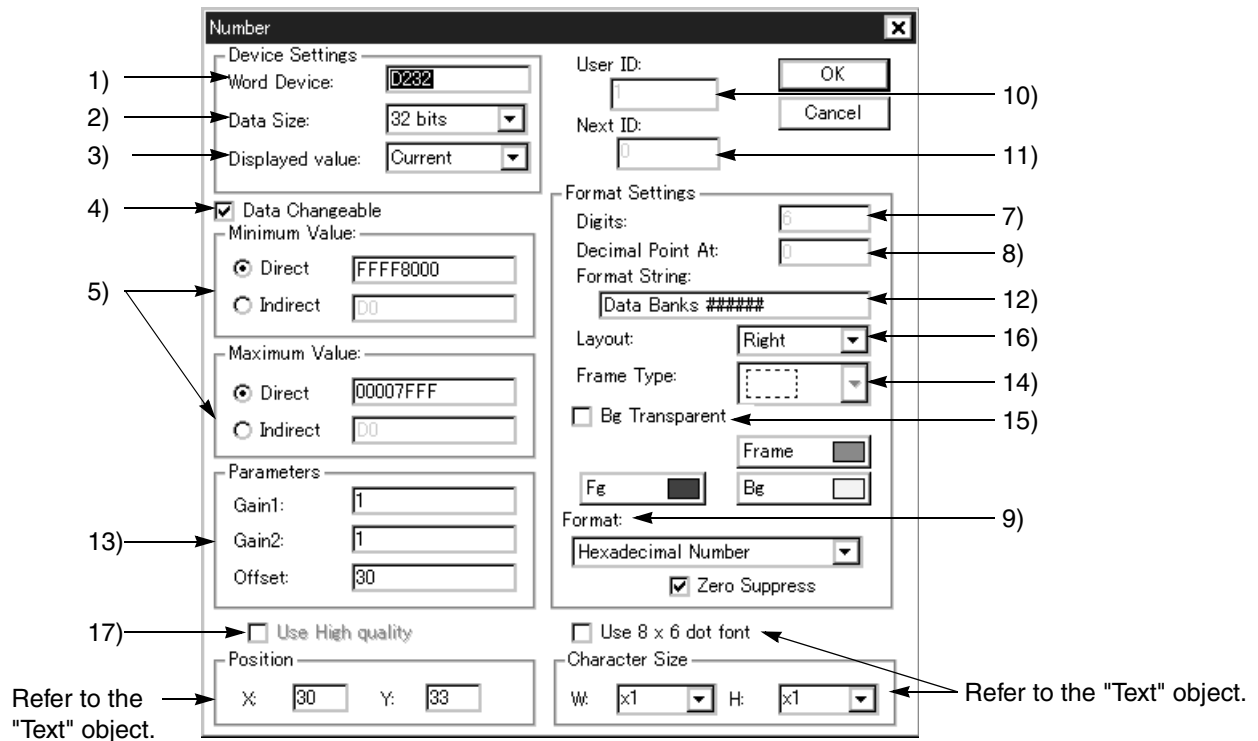
Number [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
 Displays the set value/current value of a timer/counter or the current value of a data register. A value can be easily changed by entering a desired numeric via the ten keys and the touch keys.

Number setting dialog box

10DU, 25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT



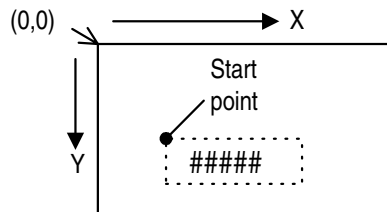
Input items

- 1) Word Device
Enter a word device in the PC to be displayed as a numeric.
Available word devices: T, C, D, V, Z
- 2) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 1) Word Device.
- 3) Displayed value
Select "Current" or "Preset" as the type of the data specified in 1) Word Device.
The available data type varies depending on the word device as shown in the table below.

Table:8.20

1) Word Device	2) Data Size	3) Displayed value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

- 4) Data Changeable
 Set whether or not the data of the device specified in 1) Word Device can be changed using the keyboard or the ten-keys in the DU. When "Preset" is selected in 3) Displayed value, "Data Changeable" should be selected so that the system becomes the status in which programs in the PC can be modified.
Caution on display in the F940GOT
 When "Data Changeable" in the "Number" object and the "Text" object is set effective with a check mark, the function "Touch Key object + Data Setting object" is added to each of the "Number" and "Text" objects.
 In the 50DU-TK and the 40DU-TK, however, the "Touch Key" object and the "Data Setting" object should be set for each of the "Number" and "Text" objects in the conventional way.
 When the pop-up keyboard is changed in the F940GOT, the "Touch Key" object and the "Data Setting" object should be set also.
- 5) Minimum Value and Maximum Value
 Set the lower limit and the upper limit of numerics which can be entered to a word device when 4) Data Changeable is selected (when the check mark "✓" is added).
 Direct: Enter a numeric directly.
 (2) Data Size 16 bits: -32,768 to +32,767 32 bits: -2,147,483,648 to +2,147,483,647
 Indirect: Enter a word device (T, C, D, V or Z).
- 6) Position
 Enter an X and coordinate and a Y coordinate as the start point from which a numeric is to be displayed.



- 7) Digits
 Enter the number of digits of the numeric to be displayed. When the decimal point is displayed, it is counted as one digit.
 Examples:
 ##### : 5 digits = 5 (numeric) + 0 (8) Decimal Point At
 ###.## : 6 digits = 3 (numeric) + 2 (8) Decimal Point At
 When a decimal point is set in 12) Format String in the F940GOT, the decimal point does not occupy one character. For the details, refer to 12) Format String.
- 8) Decimal point AT
 Enter the number of digits to be displayed after the decimal point.
 0: The decimal point is not displayed.
 1 to "7) Digits - 1 (for decimal point)": The decimal point is displayed.
 In the F940GOT, set either 8) Decimal Point At or 12) Format String.
- 9) Style
 Select the style of the number displayed on the screen.
 For the display styles available in the DU and the F940GOT, refer to the tabke below.

10DU, 25DU, 30DU, 40DU and 40DU-TK

Only "Decimal" is available.

50DU-TK

Select the numeric format among "Decimal (zero suppress)", "Decimal" and "Hexadecimal".
 When "Decimal (zero suppress)" is selected, the top digit is not displayed if it is "0".

- 9) Format

F940GOT

Select the numeric display style among "Decimal", "Hexadecimal", "Octal", "Binary" and "Real". To set the zero suppress function effective, add a check mark to "Zero Suppress".

What is the zero suppress function: When the top digit is "0", it is not displayed.

With the zero suppress function: 123
 Without the zero suppress function: 00123

Display style list

Table:8.21

Style	Zero suppress function	10DU, 20DU, 30DU, 40DU, 40DU-TK	50DU-TK	F940GOT	Display example	
Decimal (0 to 9)	Effective	—	✓	✓	839.5	-834.5
	Not effective	✓	✓	✓	0839.5	-0834.5
Hexadecimal (0 to F)	Effective	—	—	✓	A9F.2	-A9F.2
	Not effective	—	✓	✓	0A9F.2	-0A9F.2
Decimal (without sign) (0 to F)	Effective	—	—	✓	39.5	34.5
	Not effective	—	—	✓	0839.5	0834.5
Octal (0 to 7)	Effective	—	—	✓	726.5	-726.5
	Not effective	—	—	✓	0726.5	-0726.5
Binary (0 to 1)	Effective	—	—	✓	110.1	-110.1
	Not effective	—	—	✓	0110.1	-0110.1
Real (binary float value)	Effective	—	—	✓	839.5	-834.5
	Not effective	—	—	✓	0839.5	-0834.5

✓: Can be set—: Cannot be set

In the display examples above, 7) Digits is set to "7" and 8) Decimal Point At is set to "1".

10) User ID

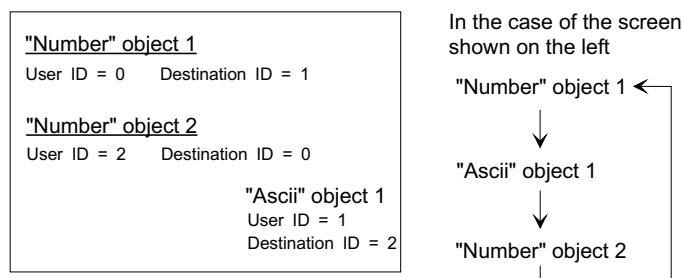
This is an ID No. (0 to 49) which notifies the PC of the selected object when two or more "Number" or "Ascii" objects are displayed and their values are tried to be changed using the keyboard. The user ID is automatically assigned from 0.

The value specified in 10) User ID is written to a word device in the PC corresponding to the control device (D + 7) for the selected object.

The user ID is automatically set as a next ID by 11) Next ID.

11) Next ID

This item sets automatically the user ID of the "Number" object or the "Ascii" object to be selected after the object currently being changed on the screen.



Handling of 10) User ID and 11) Next ID

In the DU/WIN software

The ID No. cannot be entered or changed.

When a "Number" or "Ascii" object is created at first, the user ID is automatically set to "0" and the next ID is automatically set to "0".

For a "Number" or "Ascii" object created next, the user ID is automatically set to "1" (+1) and the next ID is automatically set to "0" (head No.) so that selection is looped.

When a "Number" or "Ascii" object is added or deleted while two or more "Number" or "Ascii" objects are displayed, the user ID and the next ID are automatically assigned again (so that unused ID Nos. are not generated).

Ver2.3~

In the conventional version, "User ID" and "Next ID" are automatically assigned.

In the new version, they can be set manually using the following setting procedure:

To set automatic assignment, click to check the check box located on the left side of "Auto User ID & Next ID" on the window.

To set manual assignment, click to uncheck the check box.

This setting is stored even after the DU/WIN-E is terminated once and started up again.

To change the movement order

The list of objects created on the Object List window is displayed.

Drag an object whose selection order is to be changed, and drop it in a desired destination using the mouse. For the details, refer to "5.2.7 Adding, deleting and sorting objects (Object List)".

12) Format String

Characters (alphabets, numerics, Kanji and symbols) can be arbitrarily added to the displayed number.

Display rule in the F940GOT

7) Digits indicates the number of numerics included in the number. Characters are not taken into account.

Numerics are displayed from the lowest digit. Excessive numerics are not displayed.

Enter "#" as a half-width character.

Example 1: JY###D###-A

Each underlined "#" indicates one numeric.

Alphabets (J, Y, D, - and A) are added to the number in display.

Example 2: Measured value ###.# Ω

Each underlined "#" indicates one numeric.

A decimal point (.) and characters (abc and Ω) are added to the number in display.

The table below shows the actual display of the value stored in data registers in the PC in the examples above.

Table:8.22

Example	Data register (32 bits) in PLC	Display in GOT-F900
1	K1234	JY 1D234-A
	K123456	JY123D456-A
	K1234567	JY???D???-A
2	K12	Measured value 1.2Ω
	K1234	Measured value 123.4Ω
	K12345	Measured value ????.?Ω

13) Parameters

Four rules of arithmetic are performed for the data on 1) Word Device using "Gain 1", "Gain 2" and "Offset".

Gain 1: Used for multiplication (Enter the initial value "1" not to use Gain 1.)

Data on 1) Word Device x Gain 1

Gain 2: Used for division (Enter the initial value "1" not to use Gain 2.)

Data on 1) Word Device / Gain 2

Offset: Used for addition or subtraction (Enter the initial value "0" not to use Offset.)

Enter a minus value to perform subtraction.

Data on 1) Word Device + Offset

Parameters is performed as follows: 1) Word Device x Gain 1 / Gain 2 + Offset





14) Frame Type

Select the form of a frame displayed around the number.

To display the frame, 15) Bg Transparent should be set effective by adding a check mark.

If 15) Bg Transparent is not effective, "no frame" is automatically selected here.

Table:8.23

Display form				
	No frame	Single frame	Double frame (keyboard)	Double frame (trimmed)

15) Bg Transparent

While a check mark is displayed, the background color becomes transparent and objects and background color below are displayed

16) Layout

Select to which position the displayed number is shifted if its number of digits is smaller than that specified in 7) Digits. Select one among "Left", "Center" and "Right".

4 7 5

Left

4 7 5

Center

4 7 5

Right

Example: When the displayed numeric consists of 3 digits while 7) Digits is set to "5"

Ver2.5 ~

17) Use High quality

When the character size is large, characters are displayed in the high-quality character font of the display unit so that such characters are displayed in smooth shapes. This item is valid when the character size "W" is "x4" or more and "H" is "x2" or more.

("Use High quality" is available in the GOT-F900 main unit whose serial No. is "13****" (March, 2001) and later.)

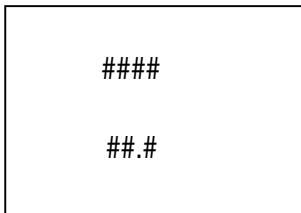
Screen image

10DU



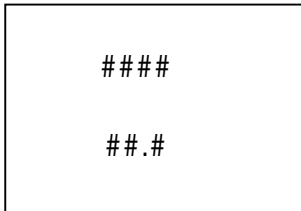
Total number of digits = 6
 >>>>>>
 Even if the number of digits after decimal point has been set, the total number of digits is 6.

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



Total number of digits=6
 #####
 Background color
 Display color
 Number of digits after decimal point=2

F940GOT



Total number of digits=5
 Start point
 Background color
 Display color
 Display frame
 Display frame color
 Enlarged view

The number of digits is regarded as "5" when 12) Format String is used for setting or as "6" when 8) Decimal Point At is used for setting.



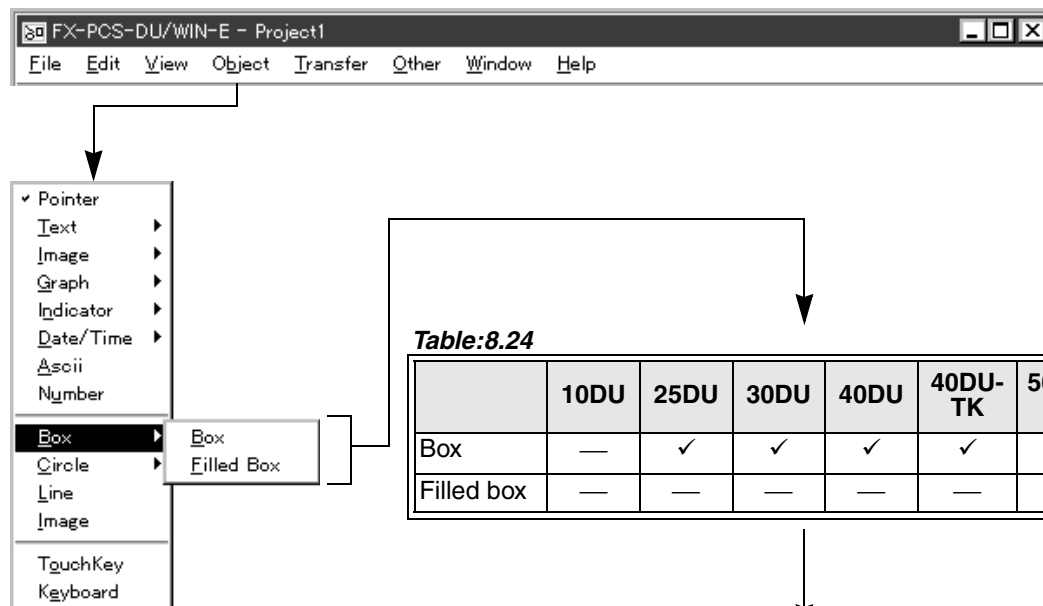
Caution on specification of a word device in PC link connection

- In the case of link connection of A Series PC to a computerIndex registers (V, Z) cannot be monitored.
- In the case of upward link connection of the SYSMAC C Series (OMRON)Set values of TIM (T) and CNT (C) cannot be monitored.

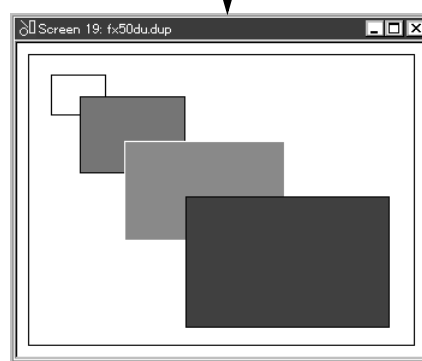
8.8 Setting the box (Box)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Box" command offers the "Box" and "Filled box" objects to display boxes on the DU. In some DU types, the "Filled box" object may not be available.



Click the start point on the screen window, draw the mouse, and release the mouse at the end point of the box to be displayed.



Description on the objects

Box

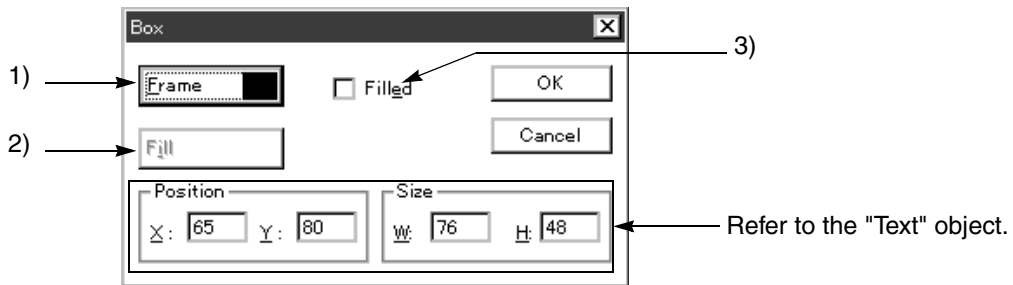
Displays the specified area as a box frame in continuous line.

Filled box

Displays the specified area as a box filled with the specified color.

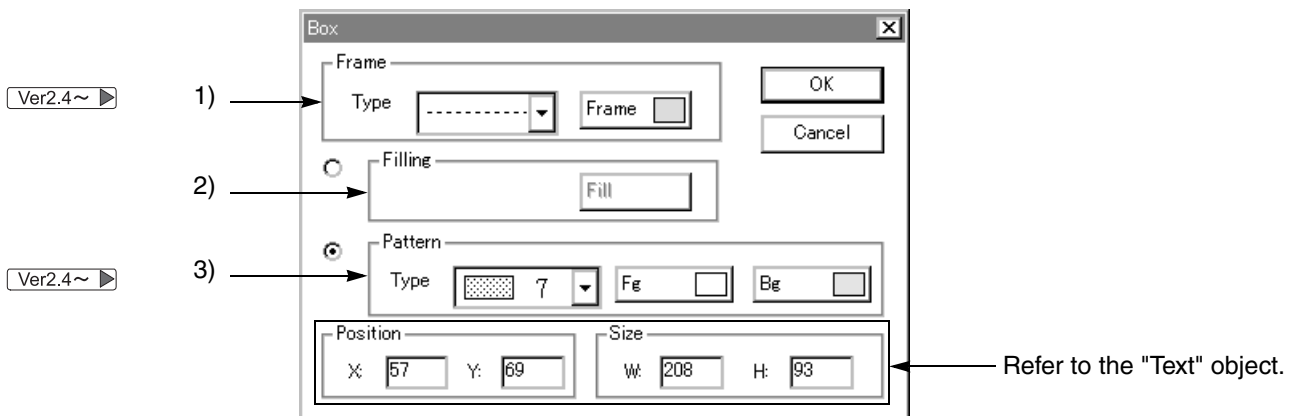
Filled box setting dialog box (Filling cannot be set in the Box setting box.)

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT

The following dialog box is offered in V 2.4 or later.



Input items

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

- 1) Frame
Select the continuous line color used to draw a box frame from the color pallet.
- 2) Fill
Select the color to fill a box from the color pallet.
- 3) Filled
Let the check mark "✓" be displayed to fill a box.
By setting this item, selection between "Box" and "Filled box" can be toggled.
This item can be set in the FX-50DU-TK(S)-E exclusively. This item is not available in any other DU.

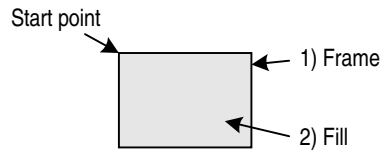
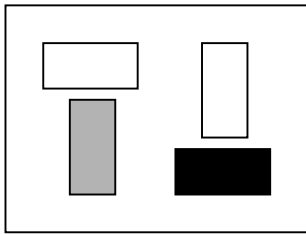
F940GOT

The following input items are offered in V 2.4 or later.

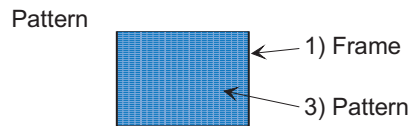
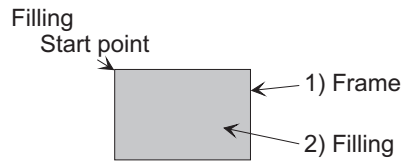
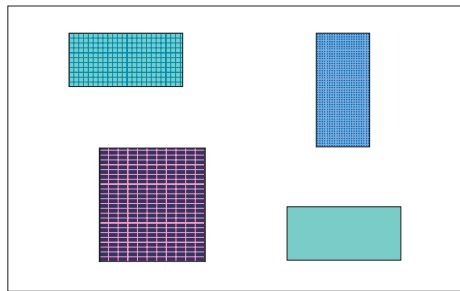
- 1) Frame
Select the line type in "Type" and the line color to draw a box frame in "Frame" from the color pallet.
- 2) Filling
Select the color to fill a box in "Fill" from the color pallet.
- 3) Pattern
In "Type", select the pattern to fill a box.
As the number in the input area is smaller, the background color is stronger. As the number is larger, the foreground color is stronger.
Select either one between "2) Filling" and "3) Pattern" by clicking to select the radio button.

Screen image

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT



8.9 Setting the circle (Circle)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Circle" command offers the "Circle" and "Filled circle" objects to display circles on the DU. In some DU types, the "Filled circle" object may not be available.

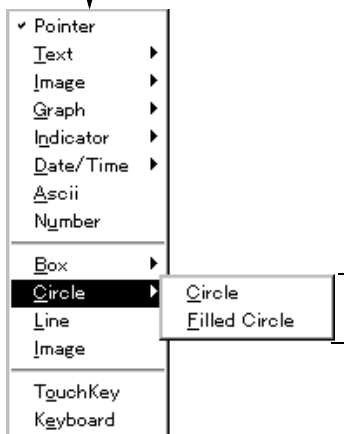
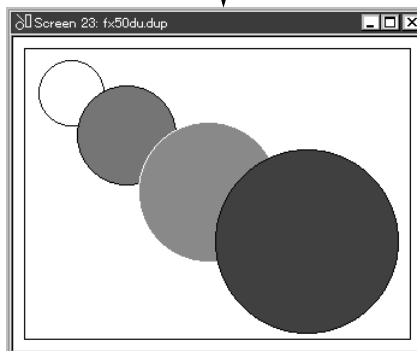


Table:8.25

	10DU	25DU	30DU	40DU	40DU-TK	50DU-TK	F940 GOT
Circle	—	✓	✓	✓	✓	✓	✓
Filled circle	—	—	—	—	—	✓	✓

Click the start point on the screen window, draw the mouse, and release the mouse at the end point of the box to be displayed.



Description on the objects

Circle

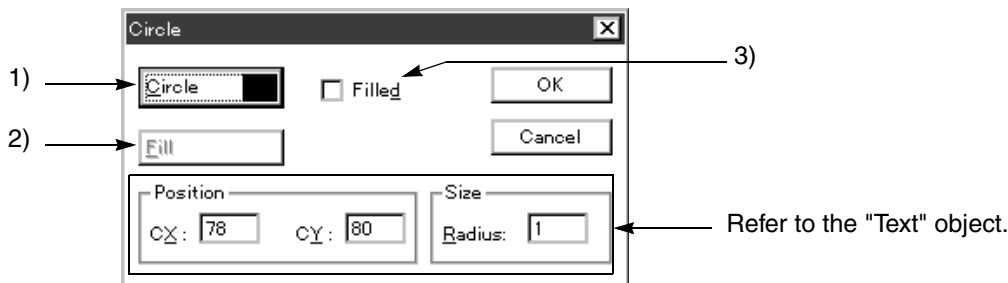
Displays the specified area as a circle frame in continuous line.

Filled circle

Displays the specified area as a circle filled with the specified color.

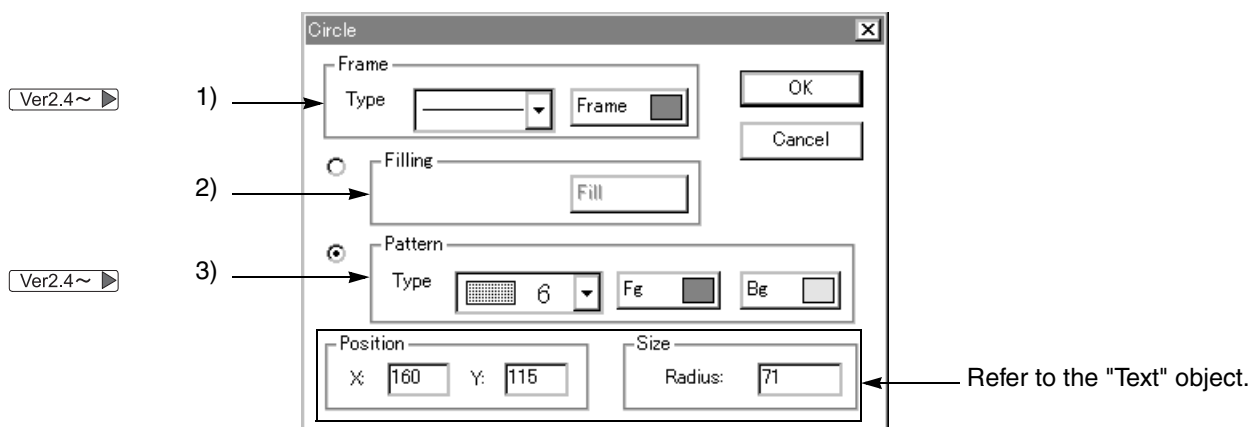
Filled circle setting dialog box (Filling cannot be set in the Box setting circle.)

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT

The following dialog box is offered in V 2.4 or later.



Input items

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

- 1) Frame
Select the continuous line color used to draw a circle frame from the color pallet.
- 2) Fill
Select the color to fill a circle from the color pallet.
- 3) Filled
Let the check mark "✓" be displayed to fill a circle.
By setting this item, selection between "Circle" and "Filled circle" can be toggled.
This item can be set in the FX-50DU-TK(S)-E exclusively. This item is not available in any other DU.

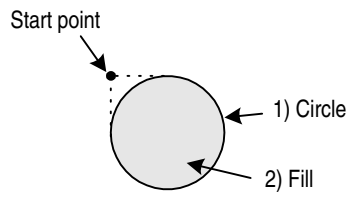
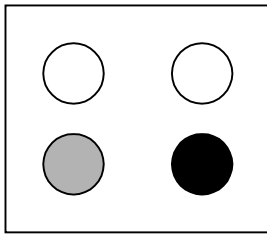
F940GOT

The following input items are offered in V 2.4 or later.

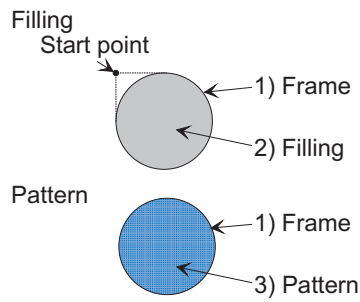
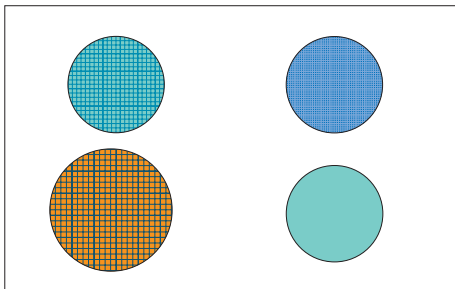
- 1) Frame
Select the line type in "Type" and the line color to draw a circle frame in "Frame" from the color pallet. However, only the straight line is available as the line type.
- 2) Filling
Select the color to fill a circle in "Fill" from the color pallet.
- 3) Pattern
In "Type", select the pattern to fill a circle.
As the number in the input area is smaller, the background color is stronger. As the number is larger, the foreground color is stronger.
Select either one between "2) Filling" and "3) Pattern" by clicking to select the radio button.

Screen image

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



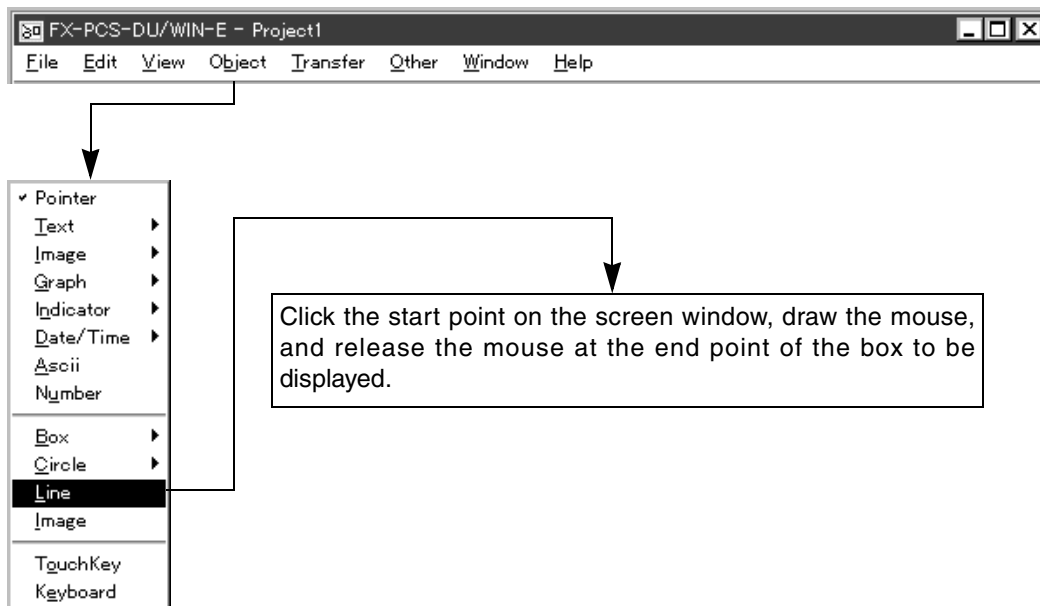
F940GOT



8.10 Setting the line (Line)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Line" object allows to draw a line between two points represented in coordinates.

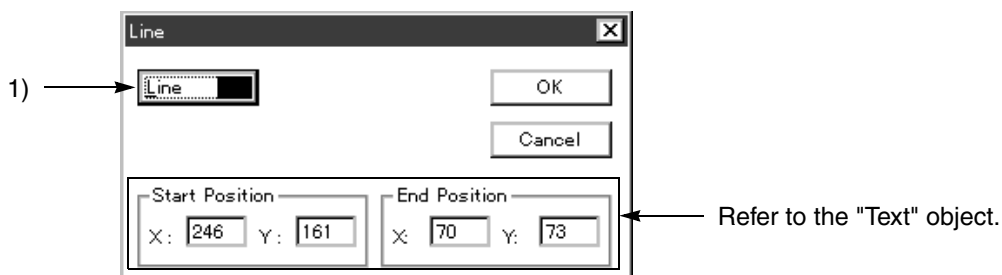


Description on the object [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK]

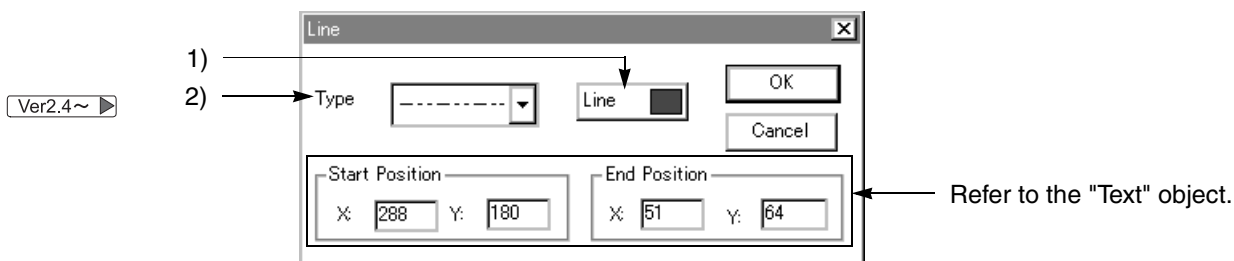
Line
Displays a continuous line between two points in the diagonal, vertical or horizontal direction.

Line setting dialog box

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT **The following dialog box is offered in V 2.4 or later.**



Input items

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK

- 1) Line
Select the continuous line color drawn between two points from the color pallet.

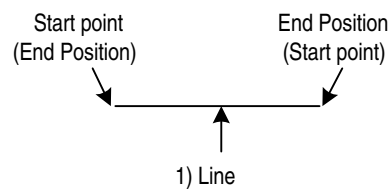
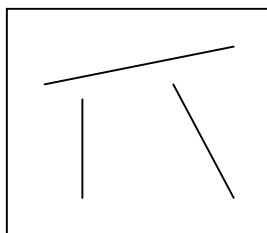
F940GOT

The following input items are offered in V 2.4 or later.

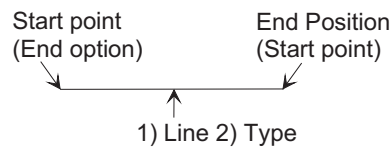
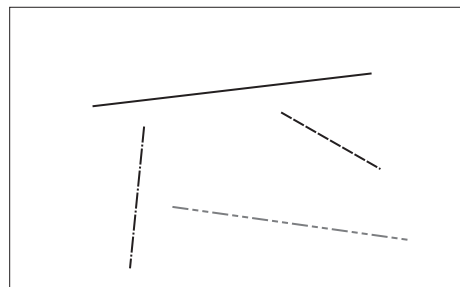
- 1) Line
Select the color of the line drawn between two points from the color pallet.
- 2) Type
Select the line type such as dotted line and alternate long and short dash line.

Screen image

25DU, 30DU, 40DU, 40DU-TK and 50DU-TK



F940GOT

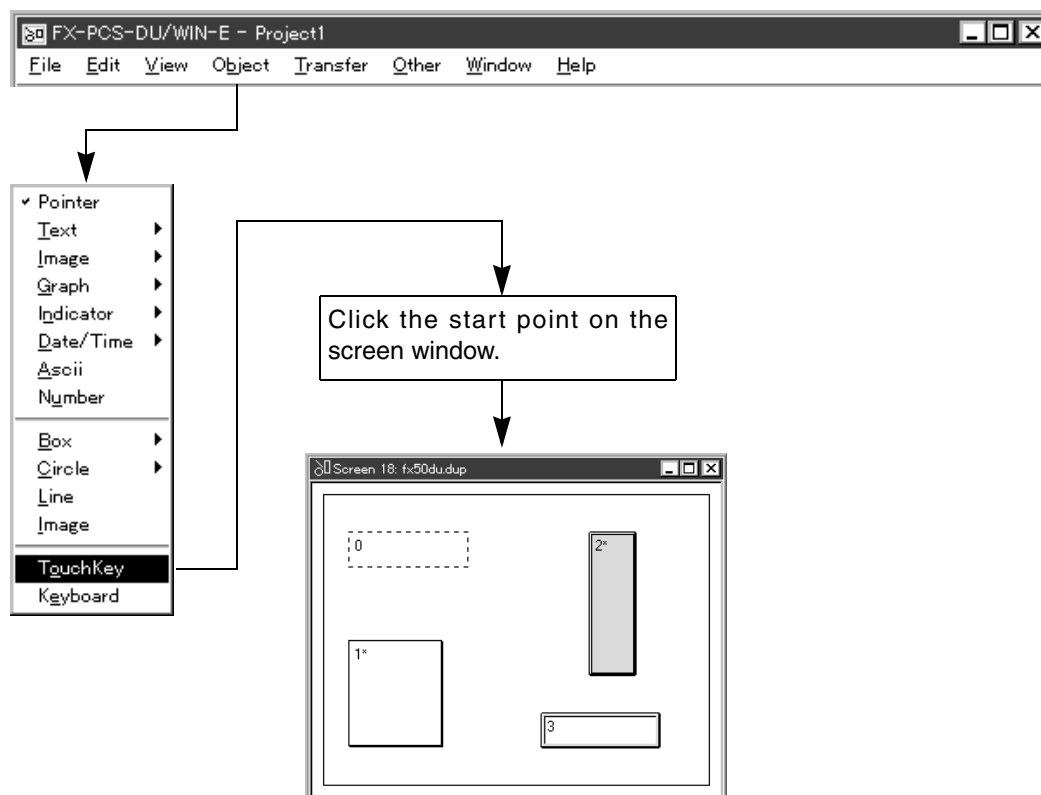


8.11 Setting the touch key (TouchKey)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓	✓	

The "TouchKey" object allows to set the button size and the button position and select the button shape by combining a cell which is a matrix of the DU screen.

By manipulating a touch key on the screen provided in the DU, switches to turn on/off bit devices in the PC and the screen changeover function are offered.



Description on the object

TouchKey

Sets the position, the size and the shape of a button which functions as a touch key on the DU screen. A function can be assigned to a set key.

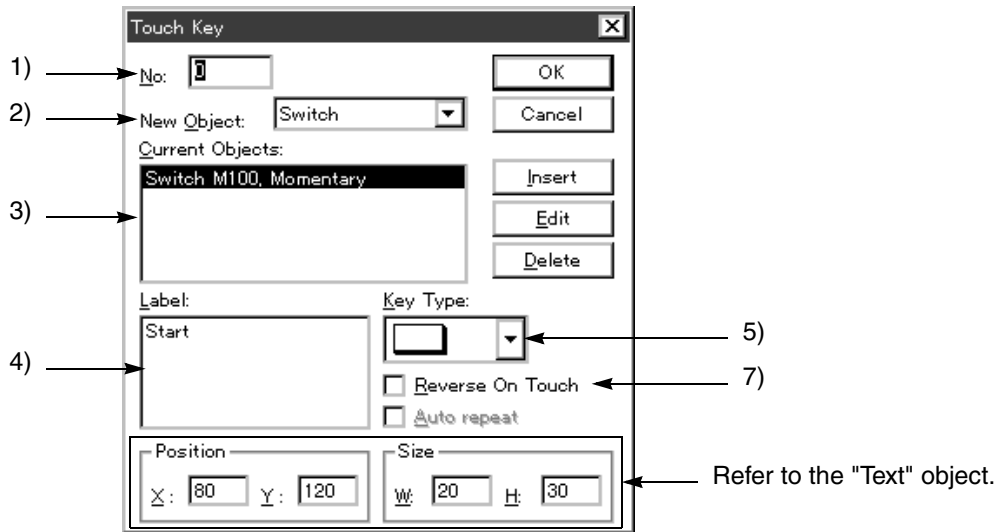
In the 50DU-TK and the F940GOT, two or more functions can be assigned.

Additional functions

- Switch [40DU-TK] [50DU-TK] [F940GOT]
Sets a bit device in the PC to be turned on/off (alternate, momentary, set or reset).
- Send databank [50DU-TK] [F940GOT]
Sets transfer between a data file (memory in the DU) and a file register in the PC.
- Change screen [40DU-TK] [50DU-TK] [F940GOT]
Changes over to a screen No. assigned to a key.
- Data setting [40DU-TK] [50DU-TK] [F940GOT]
Reads the keyboard (decimal or hexadecimal) or the ten-keys.
- Increment [50DU-TK] [F940GOT]
Adds "1" to a numeric of a word device (C, T, D) (increment).
- Decrement [50DU-TK] [F940GOT]
Subtracts "1" from a numeric of a word device (C, T, D) (decrement).
- Write constance [50DU-TK] [F940GOT]
Sets a constant (preset value) to a word device (C, T, D).

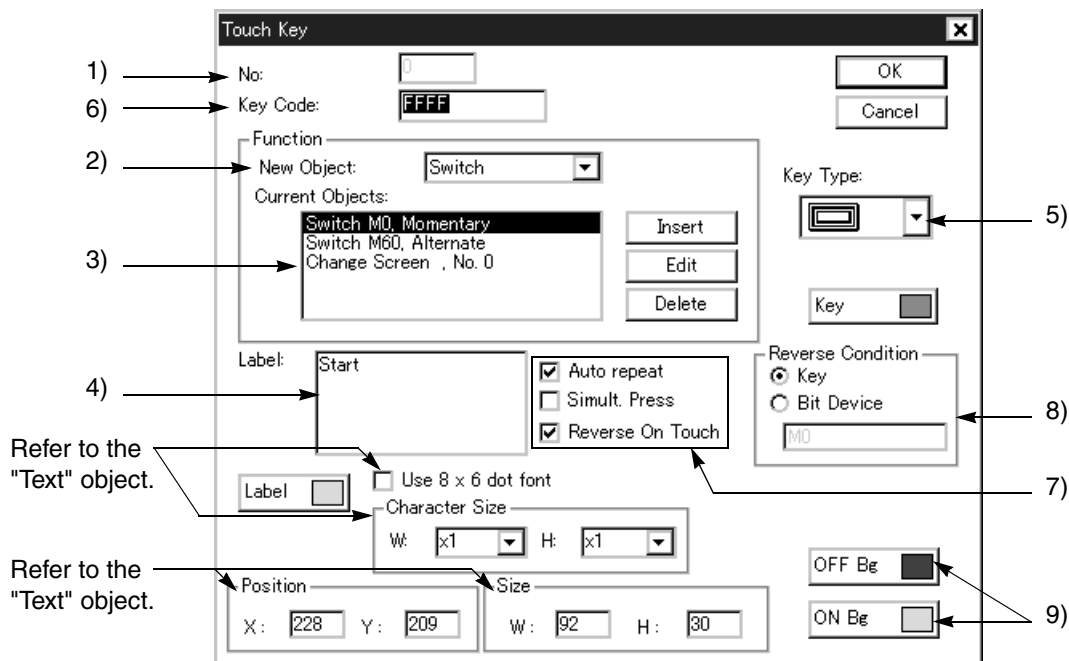
Touch key setting dialog box

40DU-TK and 50DU-TK



The dialog box above indicates an example in the 50DU-TK.
 In the 40DU-TK, "Label" and "Key Type" are not provided.

F940GOT

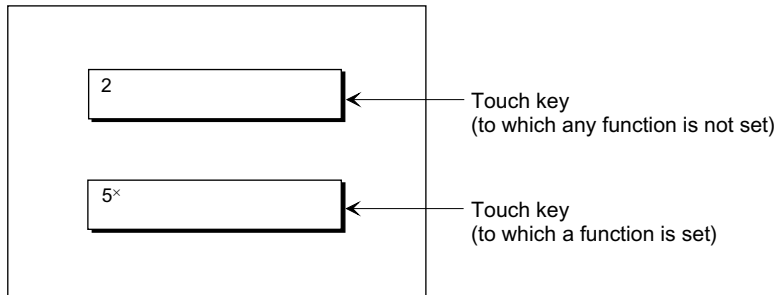


Input items

- 1) No.
 A number starting from "0" is automatically assigned to identify each touch key. This No. is also displayed in the upper left of a touch key object on the screen window.
- 2) New object
 Select and add the function actuated by the touch key.
 Though the available functions are shown on the previous page, the usable contents vary depending on the DU type.

3) Current

Displays a list of key functions assigned to the touch key displayed in 1) No. by 2) New object. When a key function is assigned, "*" (asterisk) is displayed in the upper right of the No. in the touch key object on the screen window.



50DU-TK

Example: Two "Switch" and "Change Screen" objects in total can be set.
 [A] [B]

Description on operation of 50DU-TK

- a) The DU/WIN-E software searches the function (switch) of the group A from the top of the list, and executes the first switch (M10). The second switch (Y0) and later switches are ignored.
- b) The software searches the first executable function of the group B from the top of the list, and executes it.
 (If the changeover condition for the screens Nos. 5 and 7 are not satisfied, the software executes "Increment".)

In the setting shown on the following, even if two or more functions are set, the functions after "Switch (Y0)" are ignored (if the changeover condition for the screen No. 5 is satisfied).

* If no changeover condition is satisfied, the screen is not changed over.

Table:8.26

Only 1 each from [A] and [B] (2 max. in total)	
Group A	Group B
Switch	Send Databank
	Screen Change
	Data Setting
	Increment
	Decrement
	Write Constant

Table:8.27 Function setting examples

Change Screen No. 5
Switch (M10)
Switch (Y0)
Change Screen No. 7
Increment
Change Screen No. 20

F940GOT

Example: Two or more "Switch", "Switch", "Increment" and "Change Screen" objects can be set.
 [A] [A] [A] [A]

Description on operation of F940GOT

- a) The DU/WIN-E software automatically sorts the functions in accordance with the priority.
 Priority for sorting
 Switch → Write Constant → Increment → Decrement → Change Screen → Send Databank → Data Setting
- b) The software executes the functions from the top of the list.
- c) However, if there is the "Change Screen" function and in the list the condition for it is satisfied, the later functions are ignored.
 In other words, when screen changeover is executed, the function processing of the touch key is aborted.

In the setting shown on the following, if the changeover condition for the screen No. 5 is not satisfied and the changeover condition for the screen No. 7 is satisfied, "Change Screen No. 20" after "Change Screen No. 7" is ignored.

* If no changeover condition is satisfied, the screen is not changed over.

Table:8.28

2 or more from [A] (50 max. in total)
Group A
Switch
Increment
Decrement
Write Constant
Data Setting
Send Databank

Table:8.29 Function setting examples

Switch (M10)
Switch (Y0)
Increment
Change Screen No. 5
Change Screen No. 7
Change Screen No. 20

- 4) Label
Enter a character string to be displayed within the touch key frame.

50DU-TK

The number of characters and the number of lines available vary depending on the touch key size. For the display position and the specifications of a label, refer to the description on the "Label indicator" object in Paragraph 8.4.4.





F940GOT

For the available character size, display position and specifications, refer to "8.4.4 Label indicator".

- 5) Key type
Select the touch key frame shape.

40DU-TK, 50DU-TK and F940GOT

Table:8.30



Display form	 No frame	 Shaded	 Double frame (keyboard)	 Double frame (trimmed)
40DU-TK	✓	✓	—	—
50DU-TK	✓	✓	✓	✓
F940GOT	✓	✓	✓	✓

✓ : Can be set — : Cannot be set
* When "No frame" is selected, a dotted-line frame is displayed in the DU-WIN software, and no frame is displayed in the DU and the F940GOT.

F940GOT

In the F940GOT, the following two types are available in addition to the types shown above.

Table:8.31

Display form	 Double frame (shaded solid)	 Double frame (bold)

The following frame shapes are added.

Ver2.3~▶






Label Indicator (The number of available frame shapes is increased from 4 to 7.)

The additional frame shapes are available in the OS version of the GOT-F900 shown in the table below.

Table:8.32

	OS version
F930GOT	V 2.0 or later
F940GOT	V 3.10 or later

Table:8.33

Display form					
	Toggle switch	Slide switch (lateral)	Slide switch (longitudinal)	Pushbutton switch 1	Pushbutton switch 2

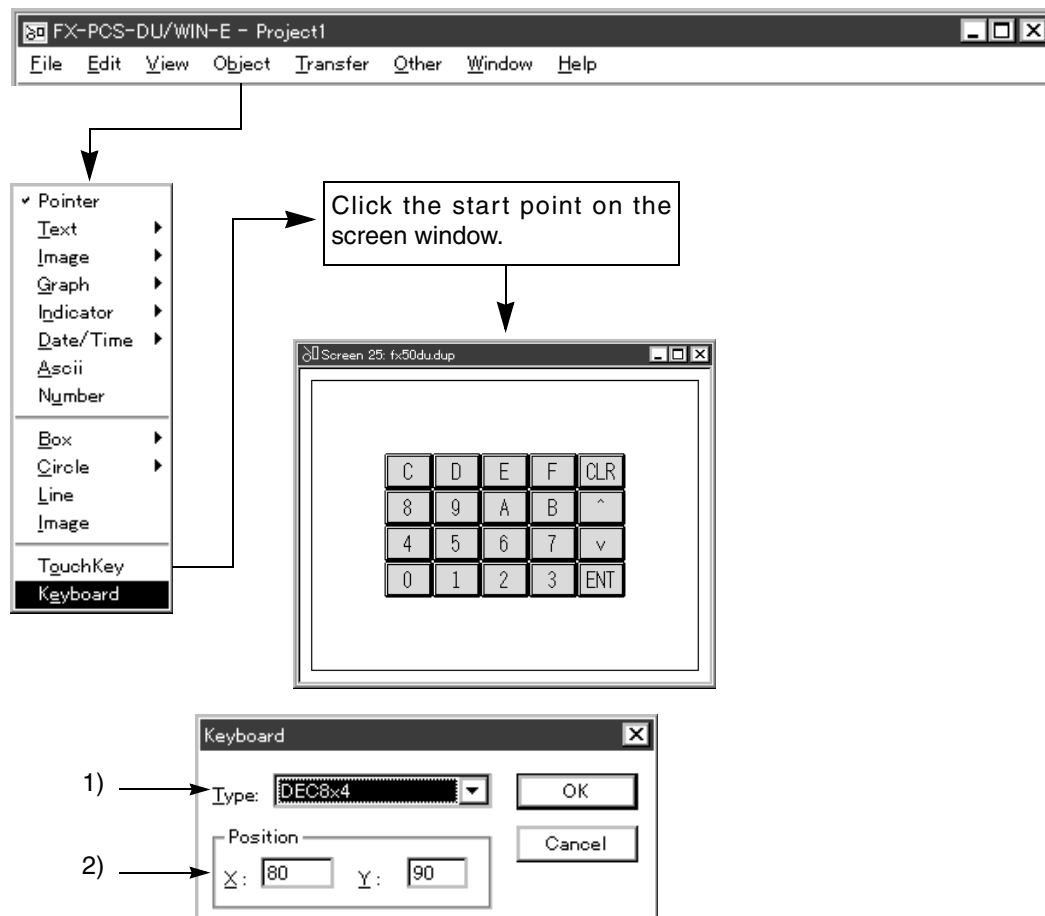
* If the OS version is former than that shown above, the frame is not displayed.

- 6) Key Code
 Enter a code to enter a character or specify a special operation. Enter a 16-bit hexadecimal value (0 to FFFF).
 For the key code list for special operations, refer to "9. Related Information". For the latest contents, refer to the Operation Manual of the F940GOT/F930GOT.
- 7) Auto Repeat, Simul. Press and Reverse On Touch
 Specify an operation in response to pressing of the touch key.
 Auto Repeat: While the touch key is pressed and held, the touch key becomes ON or OFF repeatedly in a certain cycle.
 Simul. Press: Enables simultaneous pressing of two touch keys.
 (Set a check mark to each of the touch keys to be pressed simultaneously.)
 Reverse On Touch: Enables or disables reverse of the color inside the touch key frame when the touch key is pressed.
 When "Reverse On Touch" is set effective (with a check mark), the touch key is reversed based on the setting of 8) Reverse Condition.
- 8) Reverse Condition
 Select the condition to reverse the color inside the touch key while 7) Reverse On Touch is set effective.
 Key: The color inside the touch key frame is reversed when the touch key is pressed.
 Bit Device: The color inside the touch key frame is reversed while the specified bit device is ON, and not reversed while the specified bit device is OFF.
- 9) OFF Bg / ON Bg
 Specify the display color inside the touch key frame in the ON/OFF status used when 7) Reverse Condition is set effective.

8.12 Setting the keyboard (Keyboard)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Keyboard" object allows to display always by a touch key in the DU the keyboard preliminarily set using the ten keys and the alphabet keys, and allows input of numerics and character codes.



Input items

- 1) Type
Select the keyboard type preliminarily set.
- 2) Position
Enter the coordinates in which the keyboard is always displayed.
Enter the X and Y coordinates in the unit of dot. The size equivalent to one touch key multiplied by a positive integer is required to be entered. If a coordinate with which the keyboard cannot be displayed is entered, it is regarded as an error.

Keyboard type

To each keyboard, some objects correspond. For example, from the decimal and hexadecimal keyboards, numeric values of the "Number" object can be input.

From the character 1 and 2 keyboards, characters of the "Ascii" object can be changed.

In the F940GOT, the user can set key codes to the "Touch Key" object, and make arbitrary keyboards.

Keyboard type

40DU-TK

DEC 9x4

7	8	9
4	5	6
1	2	3
0	SET	ENT

DEC 15x2

0	1	2	3	4
5	6	7	8	9

DEC 16x4

5	6	7	8	9	-	^	CLR
0	1	2	3	4		v	ENT

HEX 10x4

C	D	E	F	CLR
8	9	A	B	^
4	5	6	7	v
0	1	2	3	ENT

HEX 10x8

C	D	E	F	CLR
8	9	A	B	^
4	5	6	7	v
0	1	2	3	ENT

ALPHANUM1 16x5

A	B	C	D	E	F	BS	CLR
G	H	I	J	K	7	8	9
L	M	N	O	P	4	5	6
Q	R	S	T	U	1	2	3
V	W	X	Y	Z	0	-	ENT

ALPHA1 16x5

A	B	C	D	E	F	G	CLR
H	I	J	K	L	M	N	BS
O	P	Q	R	S	T	U	^
V	W	X	Y	Z		SP	v
ABC	abc	NUM	SYM				ENT

50DU-TK and F940GOT

In the F940GOT, keys indicated in Japanese in other models are indicated in English.

DEC 8x4

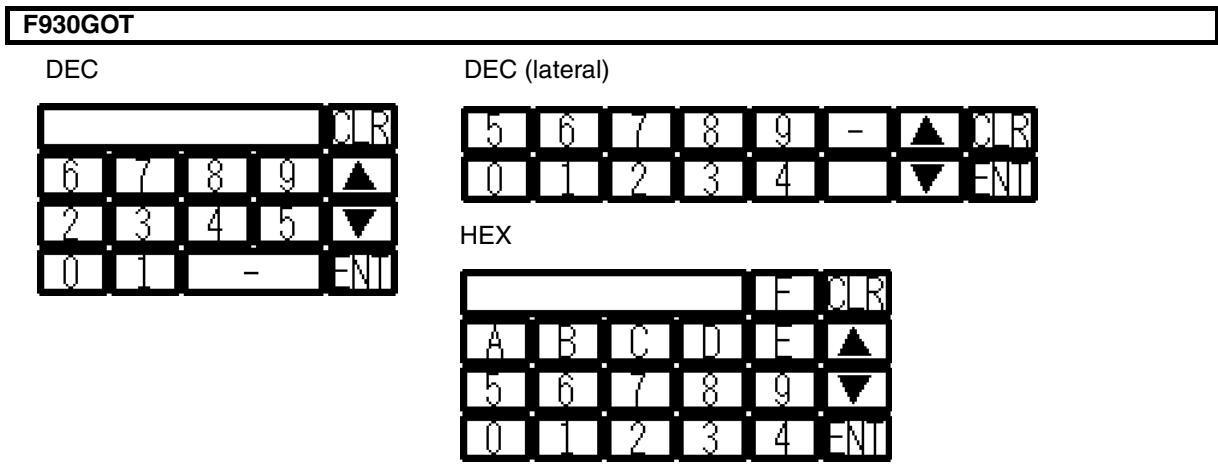
7	8	9	CLR
4	5	6	^
1	2	3	v
0	-	ENT	

DEC 8x8

7	8	9	CLR
4	5	6	^
1	2	3	v
0	-	ENT	

DEC 16x2

5	6	7	8	9	-	^	CLR
0	1	2	3	4		v	ENT



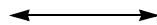
Japanese keyboard and English keyboard

- In the 40DU-TK and the 50DU-TK, the keyboard layout is changed when the language is changed over between Japanese and English in "Project Settings" in the DU/WIN software or the system screen in the DU/GOT.
In the F940GOT, only the English keyboard is available.

Japanese mode



English mode

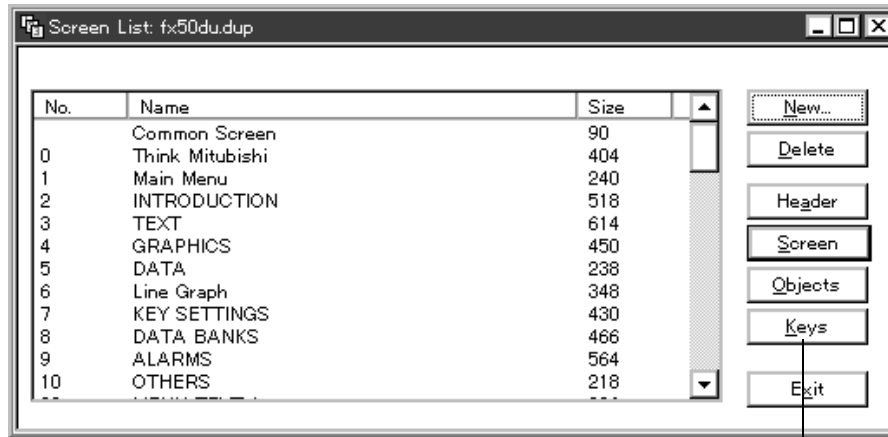


8.13 Setting the key function

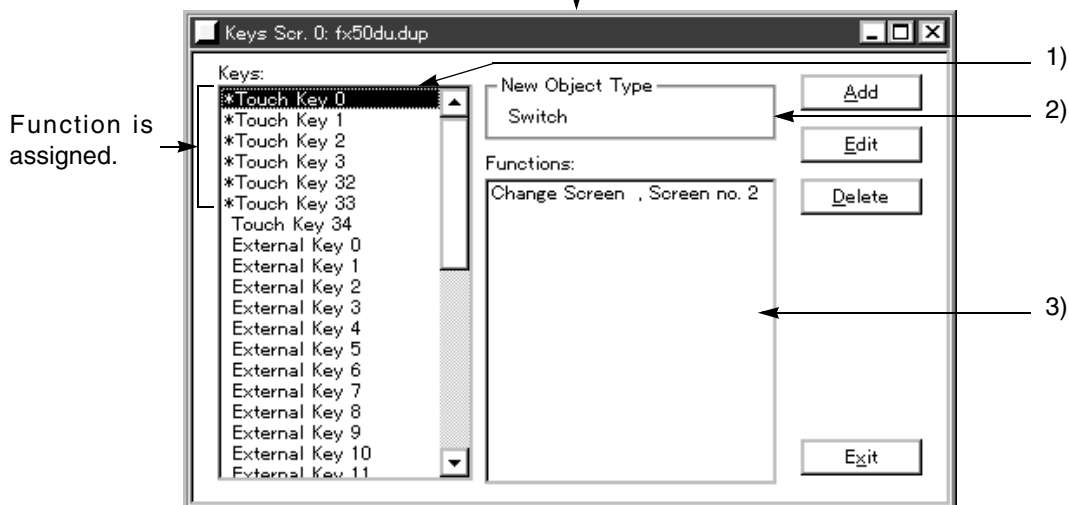
The "Keys" menu allows to assign the functions including screen changeover, ON/OFF switch and write of constant for the key switches and the touch key switches built in the DU.

Screen list window

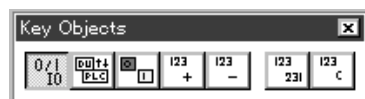
Click the Key button on the Screen List window, and set the key function on the Key List window.



Key list window



Key function object tool box




This tool box is displayed when the key list window is displayed and becomes active.

Input items


- 1) Keys
Displays the key list and indicates whether or not a function is assigned to each key. When a function is already assigned, "*" (asterisk) is added at the head of a key name.
- 2) New object type
Adds a key function selected from the key function object tool box or the "Object" tool menu. The window to set the selected key function object is displayed.
- 3) Functions
Displays a list of functions assigned to the key selected in the key list.

Key setting procedure

When a function is assigned for the first time

1. Click to select a key name to be set newly from the key list.
2. Select a key function object to be registered to 3) Functions from the Key Function Object tool box or the "Object" tool bar.  For the details, refer to the next page.
The selected key object name is displayed in 2) New Object Type.
3. Click the Add button to display the dialog box for setting the selected key object. Enter a value to the input item to be set, and click the [OK] button.
4. The specified function is added to 3) Functions and displayed there.

When an existing function is changed

1. Click to select a key name to be changed from the key list.
2. Select a key function object to be changed from 3) Functions.  For the details, refer to the next page.
The selected key object name is displayed in 2) New Object Type.
3. Click the Edit button or double-click a key function object in 3) Functions to display the dialog box for setting the selected key object. Enter a value to the input item to be changed, and click the [OK] button.
4. The specified function is changed.



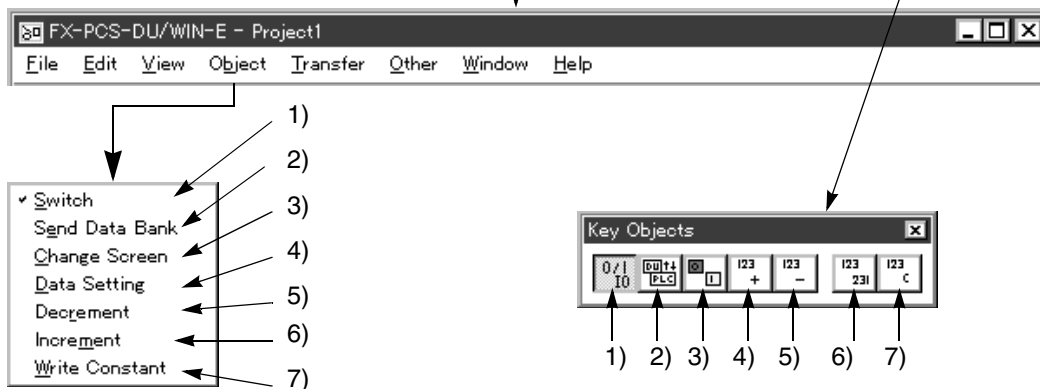
What can be set on the Key List window

On the Key List window, all of set touch keys and external keys (mechanical keys) are displayed. Only when a touch key has been already created, its contents can be changed. When creating a touch key, make the Screen window active and create it using the "Object" tool bar or a touch key in the object tool box.

The key function setting is to be performed usually on the dialog box for setting a touch key. However, on the Key List window, the key function can be changed.

8.13.1 Key function object

A key function can be selected from the "Object" tool bar or the key function object tool box.



List of key setting and applicable DU type

Table:8.34

Key setting	10DU	25DU(-P)	30DU	40DU	40DU-TK	50DU-TK	F940GOT
Switch	✓	✓	✓	✓	✓	✓	✓
Send data bank	—	—	✓	✓	✓	✓	✓
Change screen	—	✓	✓	✓	✓	✓	✓
Data setting	—	—	—	—	✓	✓	✓
Increment	—	—	—	—	✓	✓	✓
Decrement	—	—	—	—	✓	✓	✓
Write constance	—	—	—	—	—	✓	✓

✓: Can be set —: Cannot be set

Description on the object

Switch

Sets a bit device in the PC to be turned on/off (alternate, momentary, set or reset).

Send databank

Sets transfer between a data file (memory in the DU) and a file register in the PC.

Change screen

Changes over to a screen No. assigned to a key.

Data setting

Reads the keyboard (decimal or hexadecimal) or the ten-keys.

Increment

Adds "1" to a numeric of a word device (C, T, D) (increment).

Decrement

Subtracts "1" from a numeric of a word device (C, T, D) (decrement).

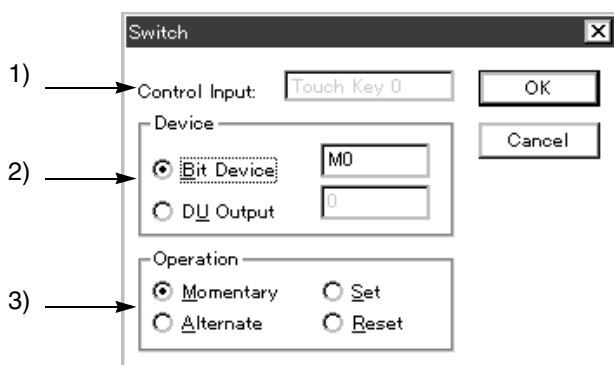
Write constance

Sets a constant (preset value) to a word device (C, T, D).

8.13.2 Switch

Screen List Window			
Screen	Objects	Keys	Header
		✓	

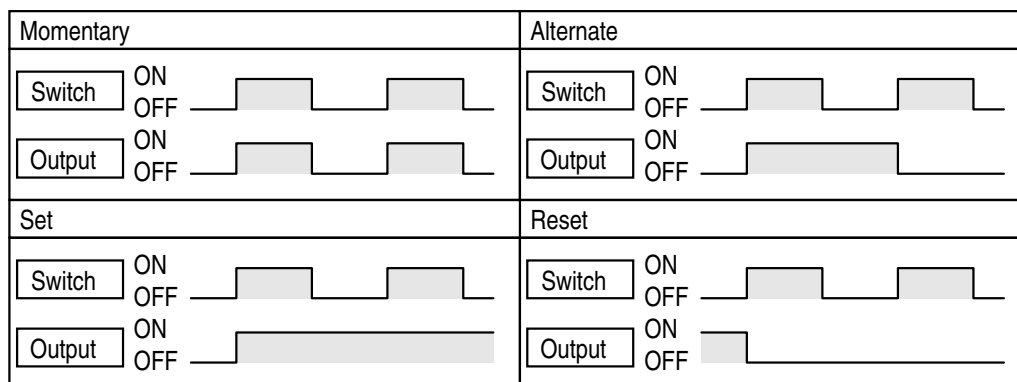
The "Switch" object allows to control the ON/OFF status of a bit device in the PC via a key (mechanical key or touch key).



Input items

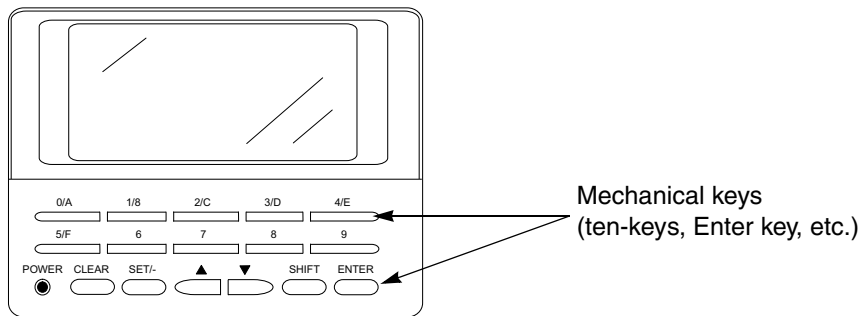
- 1) Control input
Displays the key name selected from the key list on the key list window. This dialog box displays the key name, but does not allow modification. When modifying the key name, press the [Cancel] button to close the dialog box, then select a desired key name from the key list window.
- 2) Device
Specifies the device No. or external output No. to be driven by the key specified in 1) Control input.
 - Bit Device : [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
Enter a bit device in the PC to be turned on/off.
 - DU Output : [40DU] [40DU-TK] [F940GOT]
Enter an output No. (0 to 7) of the external I/O connector in the DU.
- 3) Operation
Select the output characteristics of the switch.
 - Momentary : [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
Turns on while pressed and held, and turns off when released.
 - Alternate : [10DU] [25DU] [30DU] [40DU] [40DU-TK] [50DU-TK] [F940GOT]
Turns on when pressed or released, and turns off when pressed again.
 - Set : [50DU] [F940GOT]
Turns on when pressed, and remains on even if released or pressed again.
 - Reset : [50DU] [F940GOT]
Turns off when pressed, and remains off even if pressed again.

Switch characteristics



Keys on the DU

FX-40DU



Switch objects and applicable DU types

Format available for switch input

Table:8.35

	Touch key	Key	[Shift] + key	External	Function key
10DU	—	✓ Keys(A to C)	—	—	—
25DU	—	—	—	—	✓ 5 keys (F1 to F5)
30DU	—	✓ Ten keys (0 to 9) and ▲, ▼ keys	✓ Combination of Shift and one among ten keys (0 to 9) and ▲, ▼ keys	—	—
40DU	—	✓ Ten keys (0 to 9) and ▲, ▼ keys	✓ Combination of [Shift] and one among ten keys (0 to 9) and ▲, ▼ keys	✓ Signal input from external I/O connector (I0 to I7)	—
40DU-TK	✓ Touch keys (32 keys/screen)	✓ Ten keys (0 to 9) and ▲, ▼ keys	✓ Combination of [Shift] and one among ten keys (0 to 9) and ▲, ▼ keys	✓ Signal input from external I/O connector (I0 to I7)	—
50DU-TK	✓ Touch keys (32 keys/screen)	—	—	—	—
F940GOT	✓ Touch keys (50 keys/screen)	—	—	—	—
Handy GOT	✓ Touch keys (50 keys/screen)	—	—	—	—

✓ : Can be set — : Cannot be set

Switch mode (characteristics)

Table:8.36

	Momentary	Alternate	Set	Reset
10DU	✓	✓	—	—
25DU	✓	✓	✓	✓
30DU	✓	✓	—	—
40DU	✓	✓	✓	✓
40DU-TK	✓	✓	✓	✓
50DU-TK	✓	✓	✓	✓
F940GOT	✓	✓	✓	✓
Handy GOT	✓	✓	✓	✓

✓ : Can be set — : Cannot be set

Output format

Table:8.37

	Device (in PC)	External (external I/O function in DU)
10DU	✓	—
25DU	✓	—
30DU	✓	—
40DU	✓	✓ Signal output from external I/O connector (00 to 07)
40DU-TK	✓	✓ Signal output from external I/O connector (00 to 07)
50DU-TK	✓	—
F940GOT	✓	—
Handy GOT	✓	—

✓ : Can be set — : Cannot be set

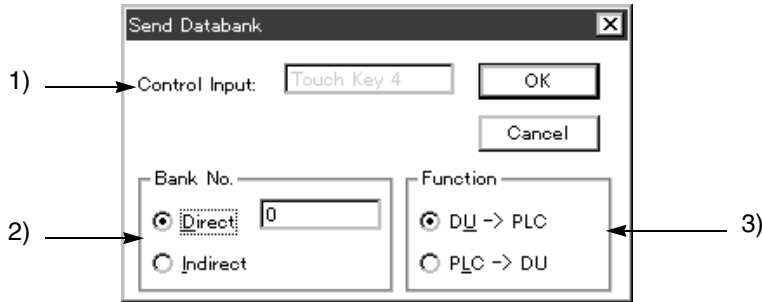
8.13.3 Send data bank

Screen List Window			
Screen	Objects	Keys	Header
		✓	

Two or more pieces of data created by the "Data bank" command can be preliminarily transferred to the DU, then can be transferred between the DU and the PC using the key set here.

Data on the specified files in the DU can be written to the PC. Data can be read from the PC to the DU.

Key (data file transfer) setting dialog box



Input items

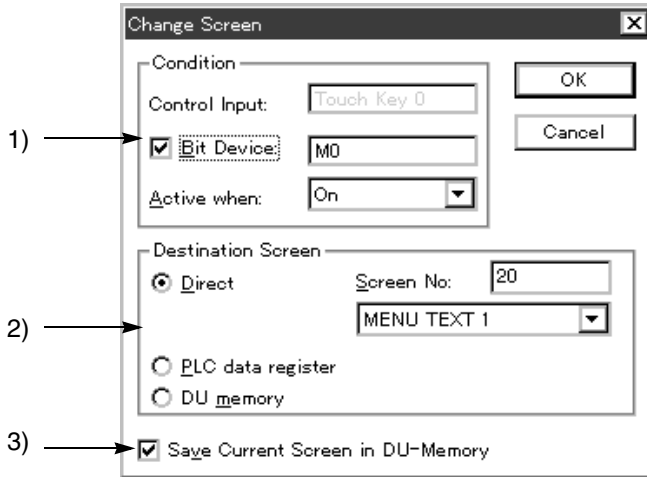
- 1) Control input
Displays the key (mechanical key or touch key) selected on the previous window. For the key types available in each DU type, refer to "Switch" in Paragraph 8.11.1
- 2) Bank No.
Enter the file No. to which transfer is executed when the key displayed in 1) Control input is manipulated.
Direct : Enter a numeric from 0 to the specified number of files as a file No.
Indirect : Specify a data register for specifying a data file as a screen specification register for a control device.
In other words, a file No. can be selected in a PC program.
(The indirect specification method is available in the FX-50DU-TK(S)-E exclusively.)
- 3) Function
DU → PC : Writes data from a data file in the memory in the DU to the PC.
PC → DU : Writes data from a data register in the memory in the PC to the DU.

8.13.4 Change screen

Screen List Window			
Screen	Objects	Keys	Header
		✓	

The "Change screen" object allows to change over the screen to the specified No. when a key (mechanical key, touch key) is pressed.

Change screen setting dialog box



Input items

- 1) Condition
 The screen is changed over when the condition set in "Control input", "Bit Device" and "Active when" is satisfied.
 Control input: Displays the key (mechanical key or touch key) name selected on the previous window. For the keys available in each DU type, refer to "1. Switch" in Paragraph 8.11.1
 Bit Device: Specify a bit device in the PC.
 Active when: Select "ON" or "OFF" when a bit device is specified.
- 2) Destination screen
 Select the method to specify the DU screen No. which is to be displayed when the condition specified in 1) Condition is satisfied.
 Direct: Enter a numeric from 0 to "Maximum number of user screens -1" as a user screen No. or a system screen No. (500 or more in the 50DU-TK, 1001 or more in the F940GOT). Or select a desired screen from the drop-down type screen list.
 When a system screen is specified in the F940GOT, add a check mark to 3) Save Current Screen so that processing can be returned from the system screen to a user screen.
 PLC data register: Specify a data register for screen changeover as a screen specification register for control device.
 In other words, the changeover destination screen No. can be specified using a PC program.
 DU memory: The screen No. set and stored on a previous screen is selected as the changeover destination. (The screen No. displayed in the memory in the DU is stored.)
- 3) Save current screen in DU-Memory
 When the check mark "✓" is displayed by clicking the mouse, the current screen No. is regarded as the changeover destination when "DU memory" is selected in 2) Destination screen on a later screen.



How to change over the screen without manipulating any key

The screen can be changed over by selecting "Object", "Indicator" and "Change screen" on the object list window.
 The setting window displayed at that time is equivalent to the window shown above except that "Control input" in 1) Condition is not provided.

8.13.5 Data setting

Screen List Window			
Screen	Objects	Keys	Header
		✓	

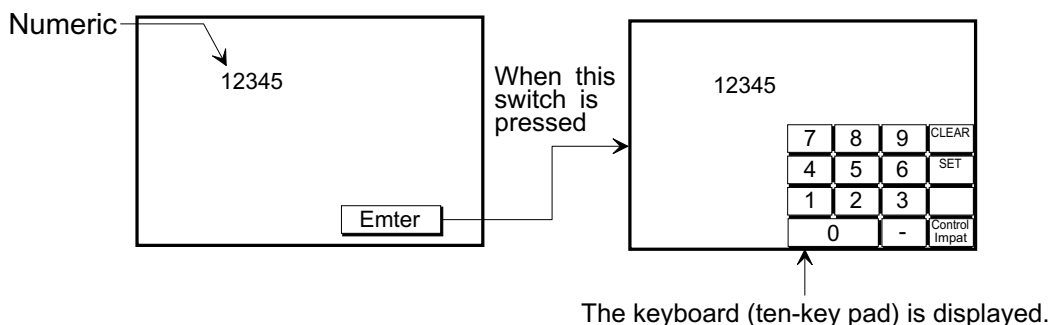
The "Data setting" object allows to display the keyboard by the specified input (touch key, mechanical key, etc.), and modify the specified numeric.

To use the "Data Setting" object, an object ("Number" or "Ascii" object) which is a target of change should be displayed on the same screen.

Have in mind that the keyboard is not popped up if there is not a target data.

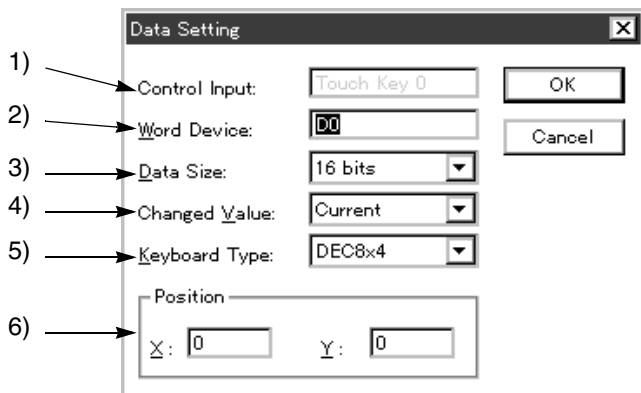
In the FX-40DU-TK-E, the ten-key pad is displayed instead of the keyboard.

Keyboard display procedure in the DU

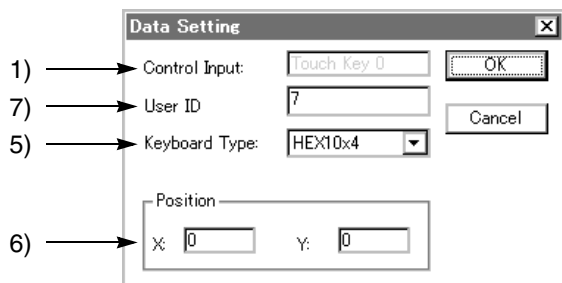


Data setting setting dialog box

40DU-TK and 50DU-TK



F940GOT



Input items

- 1) Control input
Displays the key type and the key No. to actuate data setting for the contents of a device specified in 2) Word Device. (The available key types vary depending on the DU model.)

Table:8.38

Input	Touch key	Key	[Shift] key	External input
F940GOT 50DU-TK	✓	—	—	—
40DU-TK	✓	✓	✓	✓

- 2) Word Device
Enter a word device in the PC which specifies the No. in the image library.
Available word devices: T, C, D, V, Z
- 3) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 2) Word Device.
- 4) Changed Value
Select "Current" or "Preset" as the type of the data specified in 2) Word Device.
The available data type varies depending on the word device as shown in the table below.

Table:8.39

Word Device	Data Size	Changed Value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

- 5) Keyboard type
Select the keyboard for data input. For the available keyboard types, refer to the operation manual of each DU.
- 6) Position
Enter the X and Y coordinates as the start position from which the Data setting is to be displayed.
When a keyboard object which is always displayed is set on the screen window, the "Data setting" object cannot be set. In other words, two keyboards cannot be displayed at a time.
- 7) User ID
Data change can be performed to the "Number" or "Ascii" object whose user ID is equivalent to the user ID entered here.



Keyboard display position

- F940GOT, FX-50DU-TK(S)-E
Specify a position on the screen in which the keyboard is to be popped up.
The keyboard is popped up in the specified position exclusively when the touch key specified in 1) Control input is pressed.
- FX-40DU-TK-E
The keyboard is automatically moved to a position in which a numeric to be modified is not hidden.

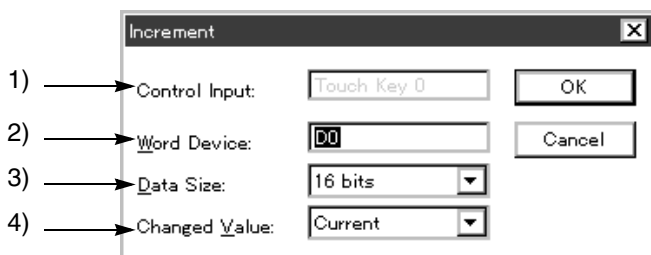
8.13.6 Increment and Decrement

Screen List Window			
Screen	Objects	Keys	Header
		✓	

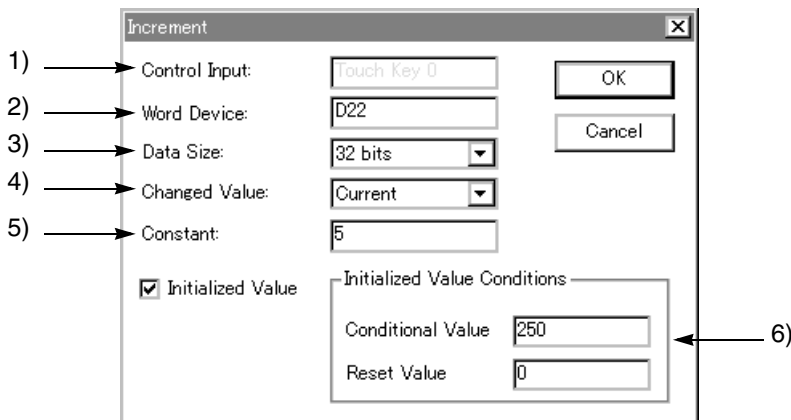
The "Increment" object adds "1" to the data in the specified word device in the PC by a key (mechanical key or touch key). The "Decrement" object subtracts "1" from the data in the specified word device in the PC by a key (mechanical key or touch key).

The "Increment" object exclusively is described below as the representative between them.

50DU-TK



F940GOT



Input items

- 1) Control Input
Displays the key (mechanical key or touch key) selected on the previous window. For the key types available in each DU type, refer to "Switch" in Paragraph 8.11.1
- 2) Word Device
Enter a word device in the PC which specifies the No. in the image library.
Available word devices: T, C, D, V, Z
- 3) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 2) Word Device.
- 4) Changed Value
Select "Current" or "Preset" as the type of the data specified in 2) Word Device.
The available data type varies depending on the word device as shown in the table below.

Table:8.40

Word Device	Data Size	Changed Value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

- 5) Constant
Enter a numeric (integer) to be added (Increment) to or subtracted (Decrement) from the word device specified in 2) Word Device.
The allowable constant range is as follows for both the "Increment" and "Decrement" objects.
3) Data Size = 16 bits: 0 to +32,767
32 bits: 0 to +2,147,483,647

Ver2.4~▶

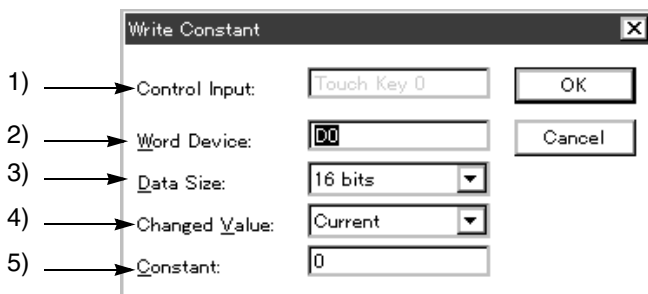
- 6) Initialezed Value Conditions
Click to check the check box when using the word operation function of the touch keys.
While the data is added or subtracted in the condition set above, if the value of "2) Word Device" becomes more or less than the value set in "Conditional Value", the value set in "Reset Value" is written to "2) Word Device".

8.13.7 Write constant

Screen List Window			
Screen	Objects	Keys	Header
		✓	

The "Write constant" object allows to write a fixed value (constant) preliminarily set to the current value or the set value of a word device in the PC.

Write constant setting dialog box



Input items

- 1) Control Input
Displays the key (mechanical key or touch key) selected on the previous window. For the key types available in each DU type, refer to "1. Switch" in Paragraph 8.11.
- 2) Word Device
Enter a word device to which the value specified in 5) Constant is to be written.
- 3) Data Size
Select either one between "16 bits" and "32 bits". Make sure to select "32 bits" when a high-speed counter or 32-bit counter is specified in 2) Word Device.
- 4) Changed Value
Select "Current" or "Preset" as the type of the data specified in 2) Word Device. The available data type varies depending on the word device as shown in the table below.

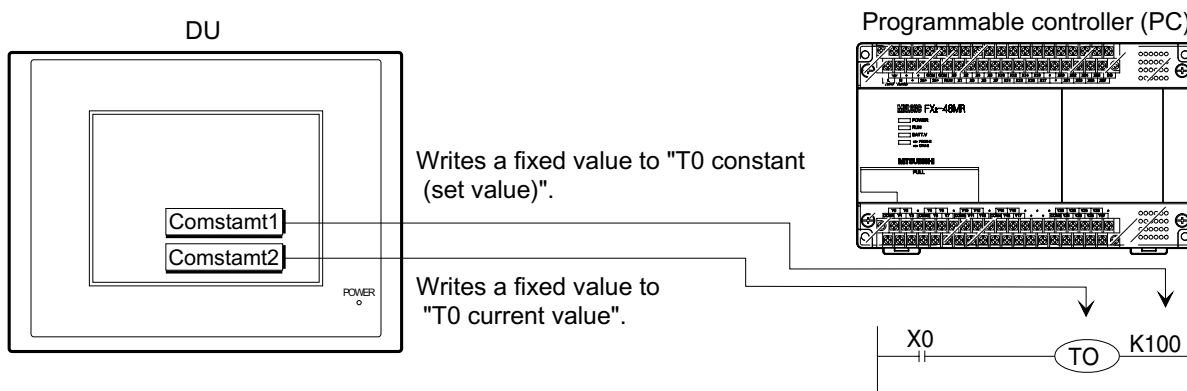
Table:8.41

Word Device	Data Size	Changed Value
T	16 bits	Current/Preset
C	16 bits/32 bits	Current/Preset
D	16 bits/32 bits	Current
V	16 bits/32 bits	Current
Z	16 bits/32 bits (making a pair with "V")	Current

- 5) Constant
Enter a numeric (decimal) to be written to the word device in the PC specified in 2) Word Device.
16 bits: -32,768 to +32,768
32 bits: -2,147,483,648 to +2,147,483,647



What is the "Write constant" object



8.14 Setting the objects related to the FX-10DU-E

Screen List Window			
Screen	Objects	Keys	Header
			✓

The objects shown in the table below are available in the FX-10DU-E. The objects whose setting contents and setting procedure are different from those in another DU type are described below.

Description on the objects.

Table:8.42

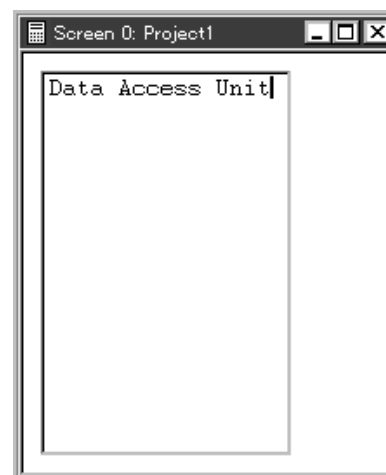
Object name		Description	Reference page
Character	Text	Allows to display characters directly on the DU screen.	(8-14)
	Displayed object		
	Time	Allows to display the hour, minute and second of the clock built in the DU.	8-5
	Date	Allows to display the year, month and day of the calendar built in the DU.	8-5
	Text Indicator	Allows to display the corresponding characters in accordance with the ON/OFF status of the specified bit device.	8-4
	Indicator	Allows to display when the specified bit device is turned on.	8-4
	Number	Allows to display the current value/set value of word devices.	8-7
Attribute object	Scroll	Allows to specify the scroll pattern on the screen.	(8-14)
	Switch	Allows to turn on/off bit devices by the A, B or C key.	8-13
	Flashing backlight	Allows to light/flash the backlight of the screen display.	(8-14)
	Screen Name	Allows to enter the screen comment.	(8-14)

Text

The "Text" object allows to enter characters directly to the desired display position on the Screen window.

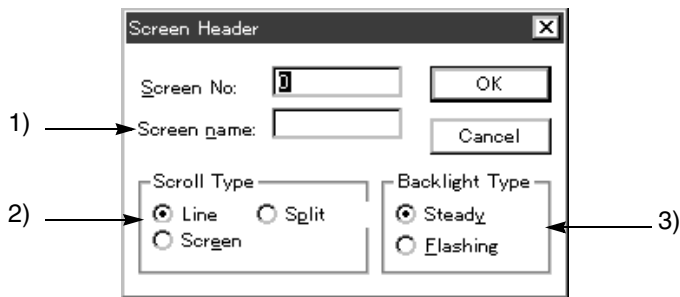
Table:8.43

Type of displayed characters	Alphabets, numerics, symbols
Number of characters	16 half-width characters/line



Scroll Flashing Screen Name

Click the Header button on the Screen List window to open the Screen Header dialog box. In the FX-10DU-E, 2) Scroll Type and 3) Backlight Type (Flashing) can be selected.



- 1) Screen Name
Enter the screen name.
- 2) Scroll Type
Select one among "Line", "Split" and "Screen".

Table:8.44

Pattern	Description
Line	Scrolls all the lines smoothly.
Screen	Scrolls two lines at a time.
Split	Fixes the first line, and scrolls the second line and later.

- 3) Backlight Type(Flashing)
Select the backlight type of the screen displayed between "Flashing" and "Steady".

8.15 Setting dedicated to handy GOT

The rear panel of the handy GOT is equipped with a grip switch to enable/disable the functions of the operation switches and the touch keys.

If the grip switch is not used, the setting should be changed.

This paragraph describes the setting procedure using the DU/WIN-E.

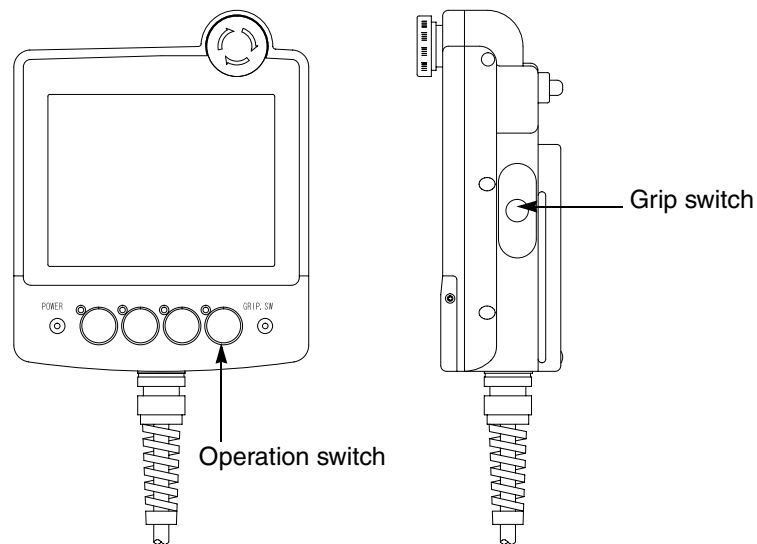
Applicable models

F940GOT-SBD-H-E F943GOT-SBD-H-E
F940GOT-LBD-H-E F943GOT-LBD-H-E

Contents of setting

- 1) Assign the LEDs of the operation switches to bit devices of the PLC.
- 2) Enable or disable the grip switch.

Handy GOT and rear panel

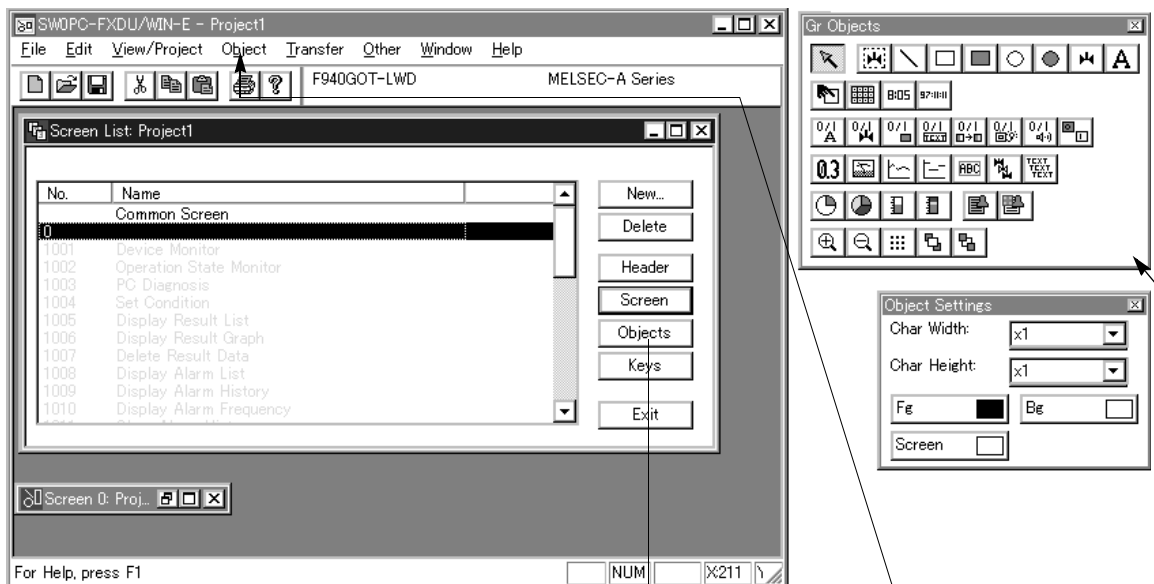


8.15.1 Assignment of LEDs of operation switches

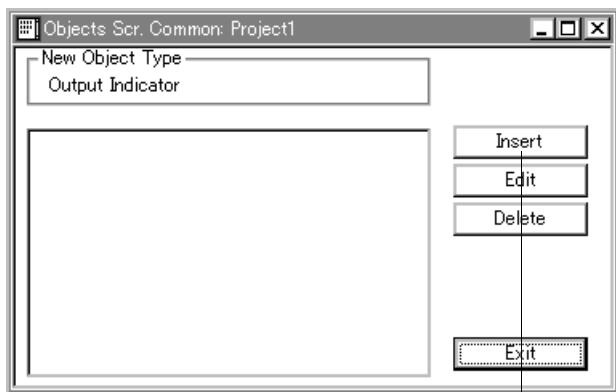
Setting procedure

Set the "Output Indicator" object on the common screen.
 It is supposed that the screen is newly created or the screen data is read in advance.

- 1) Open the screen list window, and point and select "Common Screen".



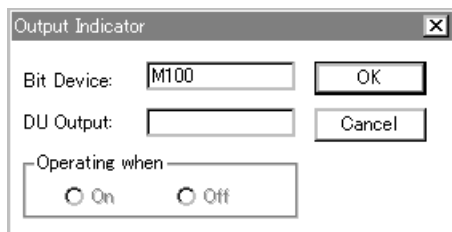
↓ Ver2.4~ Proceed to 3).
 2) Click [Objects].



- 3) Select "Output Indicator" from "Object" on the tool bar or the Objects box.

"Output Indicator" is added to "New Object Type".

Click [Insert].



The "Output Indicator" setting window appears.

- 4) In "Bit Device", input the head No. of auxiliary relays assigned to the LEDs of the operation switches.

The initial value is "M0". Pay attention so that the bit devices you set on this window do not overlap the eight control devices used for screen overlay, etc.

Bit devices assigned to LEDs

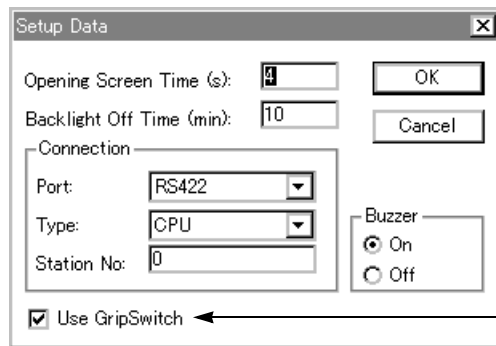
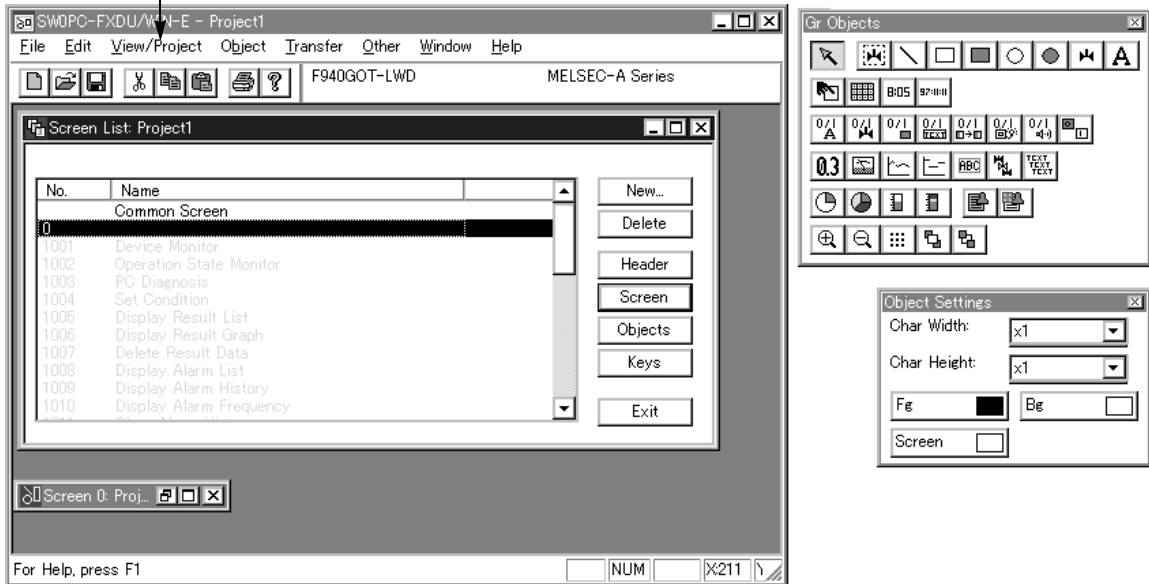
M+0 to M+3: Operation switches SW1 to SW4

8.15.2 Setting of grip switch

Setting procedure

It is supposed that the screen is newly created or the screen data is read in advance.

- 1) Select "View/Project" (tool bar)-"System Settings"->"Setup Data".

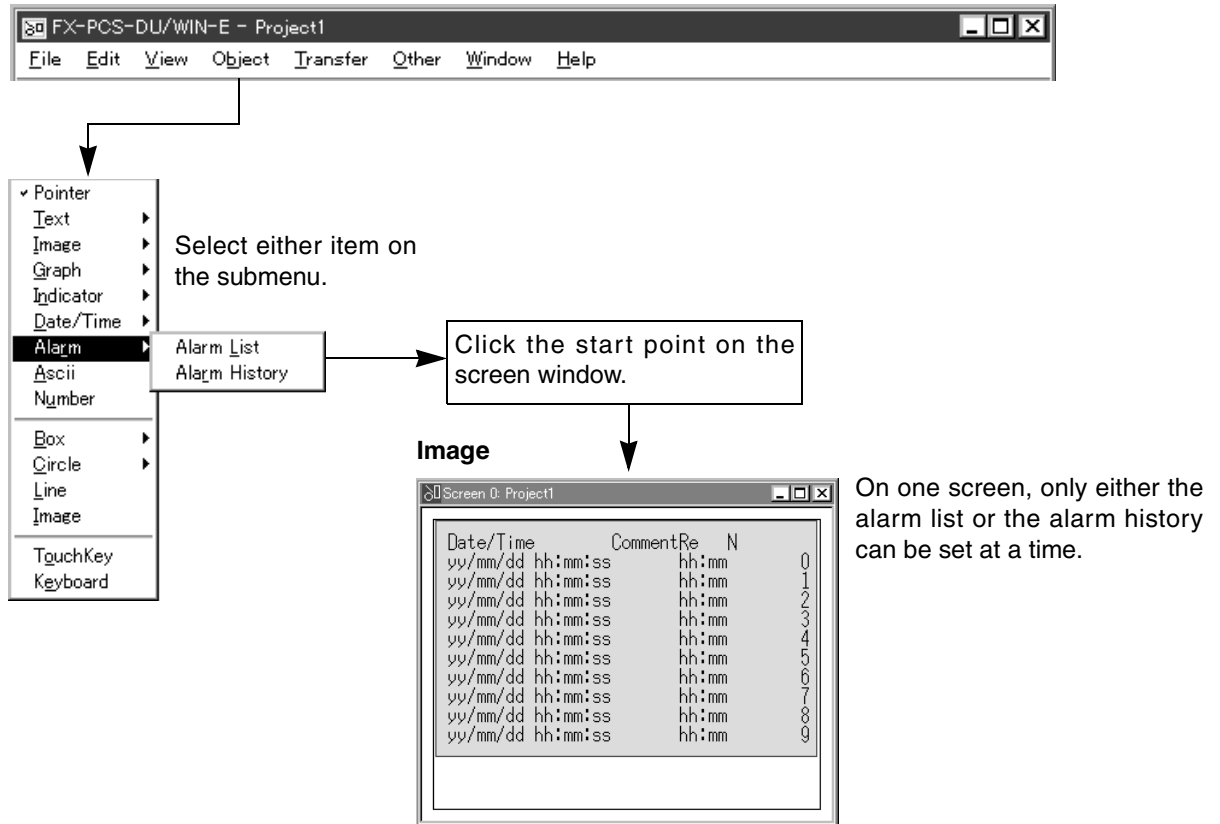


- 2) The Setup Data dialog box appears.

Click to check the check box to use the grip switch.

8.16 Setting of alarm

The "Alarm" object displays the list of present alarms and the alarm history on the F940GOT screen. On the system screen, there is a dedicated screen for such display. You can specify the display range and the display items on the screen.



Description on the objects

- Ver2.4~ ▶ Alarm List (L) [F940GOT]
 Corresponds two or more bit devices to comments (text) in the text library, and displays the list of comments and the date and time of ON of bit devices in the ON status.

- Ver2.4~ ▶ Alarm History (R) [F940GOT]
 Counts the date and time of occurrence and comments in the bit device status specified in "Alarm List", and displays the counted result as the alarm history.

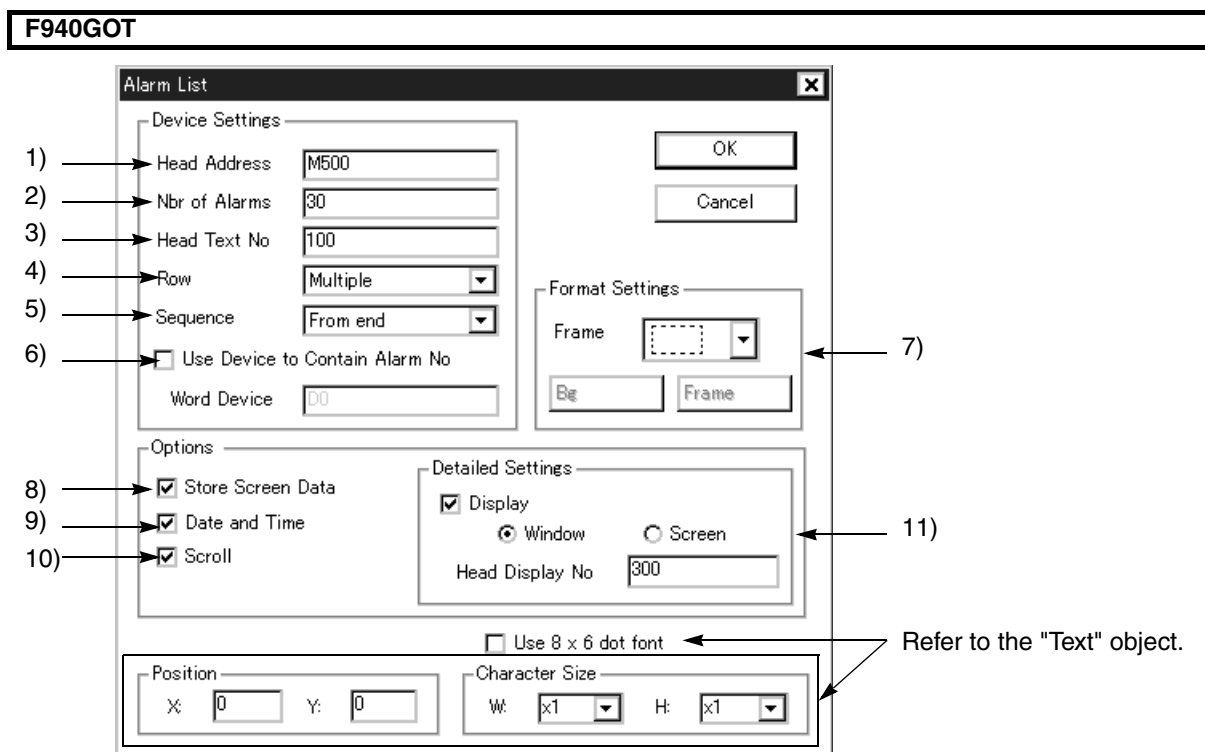
8.16.1 Alarm List (L)

Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Alarm List" object displays the alarm comment list on the F940GOT screen.

Ver2.4~ ▶ In order to use the "Alarm List" object, comments to be displayed should be registered in the text library in advance. For the details, refer to Paragraph 7.3.

Alarm List setting dialog box







Input items

- | | |
|----------------|---|
| Device setting | <ol style="list-style-type: none"> 1) Head Address
Specifies the head of the bit devices related to comments. 2) Nbr of Alarms
Specifies the number (from 1 to 255) of consecutive occupied bit devices. 3) Head Text No.
Specifies the head text No. in the text library used as comments of alarms. 4) Row
Specifies the display format of comments in the ON status assigned to bit devices inside the range specified by "1) Head Address" and "2) Nbr of Alarms".
Multiple: Displays two or more comments at a time. ("11) Detailed Settings" is available.)
Single: Displays comments one by one in the order of bit devices in the ON status. 5) Sequence
Specifies the display sequence of the alarm list to "From top" or "From end" of bit device Nos.
It can be selected whether alarms are displayed "From top" or "From end" of the time of alarm occurrence. (Ver2.5~) (Do not set this item for the F920GOT.) 6) Use Device to Contain Alarm No.
When storing the number of bit devices in the ON status inside the specified range to a word device, click to check the check box and input the word device No. |
|----------------|---|

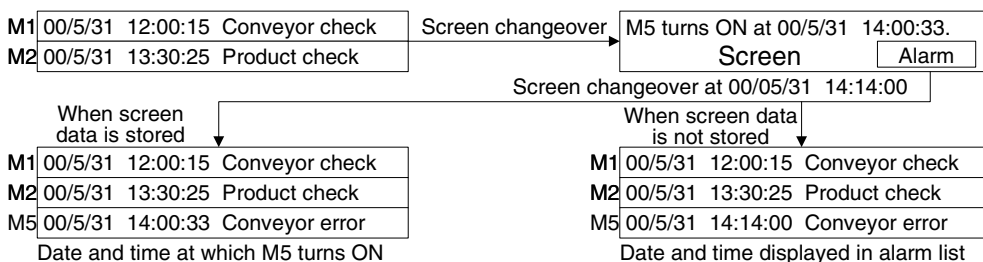
- 7) Frame
Specifies the type of the frame in which the alarm list is displayed.

Table:8.45

Display form				
	No frame	Single frame	Double frame (keyboard)	Double frame (trimmed)

* When "no frame" is selected, a dotted-line frame is displayed in the DU/WIN-E software, and no frame is displayed in the DU and the F940GOT.

- 8) Store Screen Data (Do not set this item for the F920GOT.)
Click to select this item to store the date and time at which a bit device turns ON while another screen is displayed from the screen with the alarm list in accordance with the setting of "9) Date and Time".



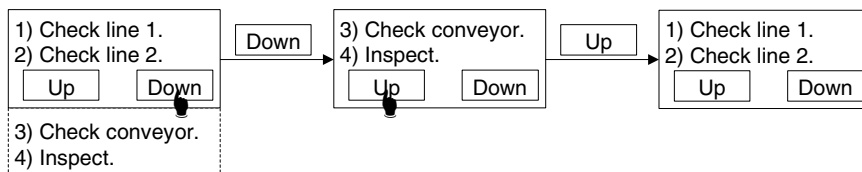
- 9) Date and Time
Click to select this item to display the date and time at which bit devices turn ON together with comments. (Do not set this item for the F920GOT.)

- 10) Scroll
Click to select this item to scroll pages of the alarm list upward and downward by pressing touch keys. While this item is not selected, the cursor can be moved upward and downward on the currently displayed page.

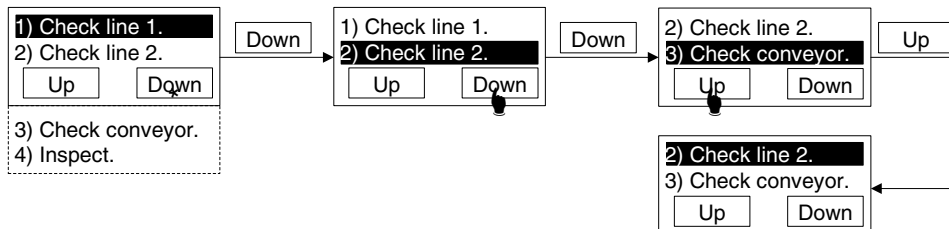
Option

Difference in operation between page scrolling and cursor movement

[While the cursor is not displayed]



[While the cursor is displayed]



When moving the cursor upward or downward or displaying or hiding the cursor, touch keys (key codes) should be created.

Table:8.50

Operation	Moves cursor upward.	Moves cursor downward.	Displays cursor.	Hides cursor.
Key code	FFB2	FFB3	FFB0	FFB1

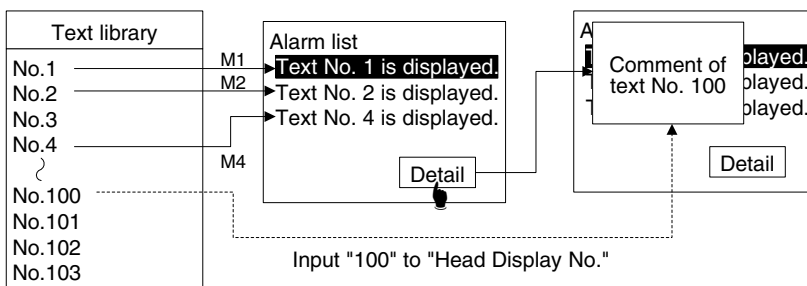
11) Detailed Settings

Valid when "4) Row" is set to "Multiple".

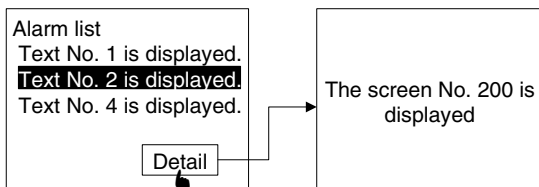
- a) To use this function, click to select "Display".
- b) Select "Window" or "Screen" by selecting an either radio button.
 - Window
The details are displayed on the dedicated window.
The comment (in the text library) specified in "Head Display No." is displayed on the window of 192 × 128 dots (offered only in the F940GOT).
 - Screen
The screen is changed over.
The screen No. specified in "Head Display No." is displayed.
- c) To realize detailed display, create a touch key (key code FFB8).

When "Window" is selected

Input "1" to "3) Head Text No."



When "Screen" is selected



Input "200" to "Head Display No."

Option

8.16.2 Alarm History (R)

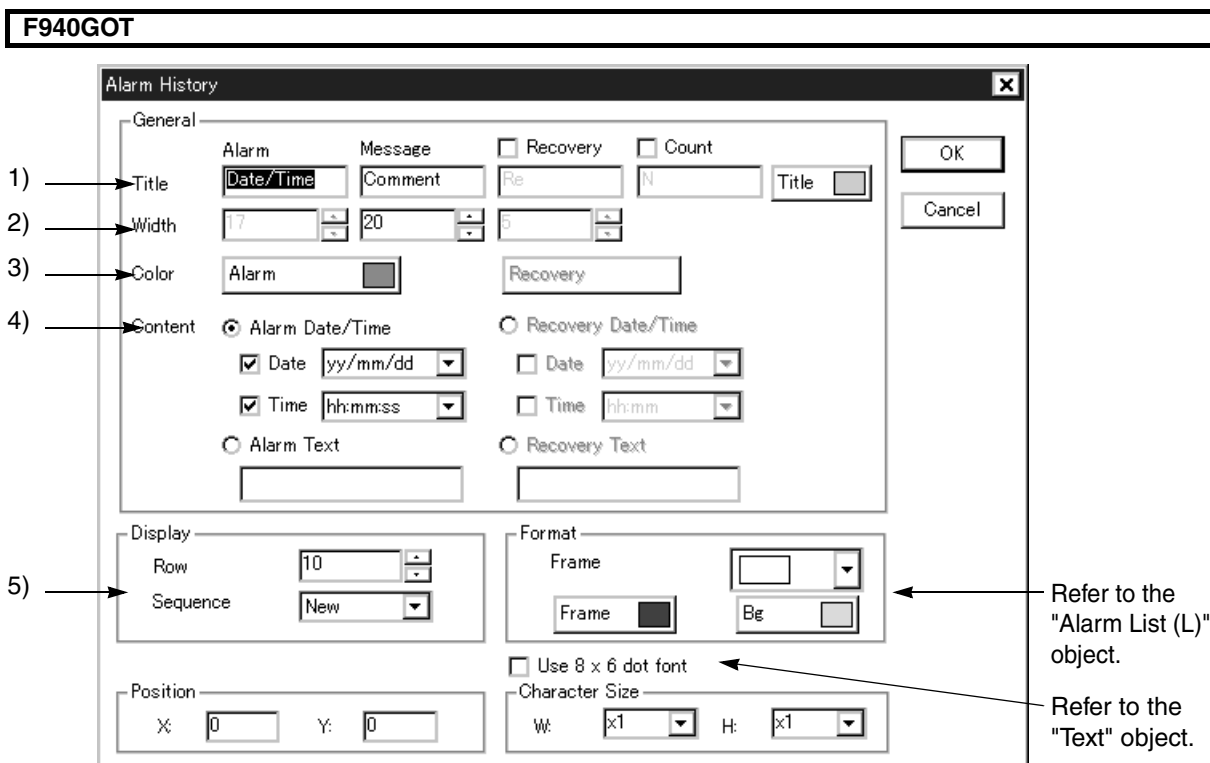
Screen List Window			
Screen	Objects	Keys	Header
✓	✓		

The "Alarm History" object counts alarms (bit devices of the PLC) occurred on the F940GOT screen, and displays them as the alarm history.

In the conventional version, the alarm history is displayed on the system screen (alarm history display). In the new version, the alarm history is an object displayed on the user screen.

Ver2.4~ ▶ In order to use the "Alarm History" object, texts to be displayed should be set in "View/Project"- "Alarms".

Alarm History setting dialog box



Input items

- Display format
- 1) Title
To "Alarm", "Message", "Recovery" and "Count", input the title name to be displayed respectively. Set the color of characters to "Title".
To display "Recovery" and "Count", click to check each check box.
 - 2) Width
Set the number of total digits of the items set in "1) Title".
(If "Date" and "Time" are selected in "Content", "Recovery" and "Count" cannot be input.)
The allowable maximum number of total digits is shown below.
Set each item to be displayed within this range.
F940GOT: 40 half-width characters max.
F930GOT: 30 half-width characters max.
If the number of total digits exceed the allowable value above, the error message "Data length is too large" appears.

Display format

Table:8.46

Item	Description	Preset value
Alarm	Allowable number of characters varies depending on setting of "4) Content" below.	
Message	1 to 40 characters can be set.	
Recovery	It can be displayed or hidden. Allowable number of characters varies depending on setting of "4) Content" below.	
Count	It can be displayed or hidden. Allowable number of characters varies depending on setting of "4) Content" below. (This item occupies 8 characters.)	8
40 or less in total		

However, when "Frame" in "Format" is displayed, the allowable maximum number of digits is smaller because 10 dots (which correspond to 2 characters) are required for the frame in each of the upper, lower, left and right directions.

- 3) Color
Set the color of characters for current alarms ("Alarm") and the color of characters for recovered alarms ("Recovery") respectively.
- 4) Content
Select the contents to be displayed in "Alarm" and "Recovery".
Example: May 31, 2000, 15:27:56

Table:8.47

		Setting	Display example	Number of characters
Alarm Date/Time	Date *1	mm/dd	5/31	5
		yy/mm/dd	00/5/31	8
		mm/dd/yy	5/31/00	8
		dd/mm/yy	31/5/00	8
	Time *1	hh:mm	15:27	5
		hh:mm:ss	15:27:56	8
Alarm Text		Input characters are displayed as they are (1 to 40 characters).		1 to 40

*1 When displaying Date and Time at the same time in the F920GOT, only the combination of "mm/dd" and "hh:mm" is available.

- 5) Display
Set the number of lines of the alarm history and the sequence of display.
The allowable maximum number of lines is shown below (excluding the title line).

Table:8.48

	Maximum number of lines
F940GOT	13
F930GOT	3

However, when "Frame" in "Format" is displayed, the allowable maximum number of digits is smaller because 10 dots (which correspond to 1 character) are required for the frame in each of the upper, lower, left and right directions.

Screen image

F940GOT

Date/Time	Comment	Re	N
8:35:00	Conveyor error	8:37:15	5
8:55:15	Product check	9:05:45	2
10:05:05	Position error		10

1	Introduction
2	Installation
3	Starting up and Terminating the Program
4	What You Should Know Before Starting Drawing
5	Preparation for Drawing and Basic Operations
6	Menu Bar Functions
7	Common Drawing Operations
8	Object Function Description
9	Related Information

9. Related Information

This section offers the data including the index for reference page for each function, the memory size of each object in the DU and the upgrade table. Refer to this section upon necessity.

9.1 Index

9.1.1 Function index and applicable DU type

Table 9.1: [File]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
New	Starts a new drawing file.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5.2.1
Open...	Reads an existing DU drawing data file.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5.2.3
Close	Cancels the data file currently being drawn.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.1
Save	Overwrites an existing drawing data file.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.1
Save As...	Saves the DU drawing data to a file with a new name.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.1
Print...	Specifies the data items to be printed, and prints them out.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.5
Document Footer...	Sets comments to be printed in the footer of paper.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.3
Print Preview	Displays the print image on the CRT of the personal computer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.4
Print Setup...	Selects a printer and sets the details (property).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.2.5
Exit	Terminates the DU/WIN software.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	3.3

✓: Function is provided. —: Function is not provided.

Table 9.2: [Edit]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
Cut	Cuts the selected data, and copies it to the clip board.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.3.1
Copy	Copies the selected data to the clip board.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.3.1
Paste	Copies the contents of the clip board to the cursor position.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.3.1
Find...	Searches screen Nos. used in object names.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.3.2

The selected data includes screen data and objects (texts, indicators, etc.).

Table 9.3: [View]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
Screen List...	Makes the Screen List window active, and displays it on the top.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5.2.5
Text Library...	Allows to create and change the text library.	—	✓	—	—	—	✓	✓	✓	✓	✓	6.4.2
Image Library...	Allows to create and change the image library.	—	—	—	—	—	✓	✓	✓	✓	✓	6.4.3
Device Comments...	Allows to create comments to be displayed instead of device Nos. in the device monitor in the DU.	—	—	✓	✓	✓	✓	—	—	✓	✓	6.4.4

Table 9.3: [View]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
Alarms...	Allows to create alarm messages which correspond to the specified bit devices and are to be displayed in the DU.	—	✓	—	✓	✓	✓	✓	✓	✓	✓	6.4.5
Data Banks...	Allows to create the numeric data to be transferred between the DU and the PC, and set data files by specification of word devices of objects.	—	—	✓	✓	✓	✓	✓	✓	✓	✓	6.4.6
Time Channels...	Allows to turn on/off bit devices in the PC when the time on the day of the week set by the real-time clock built in the DU has come.	—	—	—	—	—	✓	✓	✓	✓	✓	6.4.7
Data Sampler...	Acquires the specified word devices in the PC when the specified time has come or when the specified bit device in the PC becomes ON, and stores the acquired data in the DU.	—	—	—	✓	✓	✓	—	—	✓	✓	6.4.8
—	Allows to create character patterns to be registered as external characters.	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.4.9
Hard Copy	Allows to output screen image to printer.	—	—	—	—	—	—	—	—	✓	✓	6.4.10
System Settings	Allows to set the operation environment of the DU.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.4.11
Project Settings...	Allows to select the DU type, the connected PC and the language for system screens in the DU.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.4.11
Interface Devices...	Allows to specify the devices which change over screens from the PC and the bit devices which determine the number of overlaid screens.	—	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.4.11
Data/Time Format	Allows to select the date/time format between the European type and the USA type.	—	✓	—	✓	✓	✓	✓	✓	✓	✓	6.4.11
Entry Code	Allows to enter entry codes to protect screens.	—	—	—	✓	✓	✓	✓	✓	✓	✓	6.4.11
Set up Data	Allows to set the duration to display the title screen, the time at which the backlight becomes extinguished, and the DU-PC connection type.	—	—	—	—	—	✓	✓	✓	✓	✓	6.4.11
Du Printer	Allows to set the communication format for a printer connected to the RS-232C interface in the DU.	—	—	—	✓	✓	✓	—	✓	✓	✓	6.4.11
Du Menu Key	Allows to set the position of the touch keys which call the system menu screen in the DU.	—	—	—	—	—	✓	—	✓	✓	✓	6.4.11
Status Observation	Sets the bit device and the word device written in the PLC when the specified bit device condition is established.	—	—	—	—	—	—	✓	✓	—	✓	6.4.11
Color Settings	Selects 16 colors to be used among 256 colors (only in the F940WGOT).	—	—	—	—	—	—	—	—	—	✓	6.4.11

For objects, refer to "9.1.2 Object name index and applicable DU type".

Table 9.4: [Transfer]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
DU	Reads/writes/collates the screen data between the DU, and reads the sampling data, the alarm history and the alarm frequency data acquired by the DU.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.5.3
OS	Writes system programs of the F940GOT.	—	—	—	—	—	—	✓	✓	✓	✓	6.5.4
Comm. Settings...	Allows to select the RS-232C communication port connected to the DU (or PC in the 10DU).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.5.5

Table 9.5: [Other]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
Project Test...	Allows to check the screen data and the set data.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.6.1
Memory Map...	Displays the memory capacity occupied by user screens, external characters, data files etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.6.2
Sampled Data...	Displays the data acquired by the DU, and exports (writes) it to a file.	—	—	—	✓	✓	✓	✓	✓	✓	✓	6.6.3
Alarm History	Displays the alarm history acquired by the DU, and exports (writes) it to a file.	—	✓	—	✓	✓	✓	✓	✓	✓	✓	6.6.4
Alarm Frequency...	Displays the alarm frequency data acquired by the DU, and exports (writes) it to a file.	—	✓	—	✓	✓	✓	✓	✓	✓	✓	6.6.5

Table 9.6: [Window]

Function	Outline of function	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940 GOT	F940W GOT	Reference page
Grid	Turns ON/OFF the grid of the specified interval on the Screen window.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.7.1
Grid Settings...	Specifies the dot-to-dot interval of the grid, and sets the object suction function to the grid.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	6.7.2

9.1.2 Object name index and applicable DU type

Objects which can be created on the screen window

Table 9.7:

Object name	DU type for data file										Reference page
	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940GOT	F940WGOT	
Text											8.1
Text	●	●	×	×	×	●	●	●	●	●	8.1.1
Library Text	×	●	×	×	×	●	●	●	●	●	8.1.2
Image											8.2
Image	×	×	×	×	×	●	●	●	●	●	8.2.1
Library Image	×	×	×	×	×	●	●	●	●	●	8.2.2
Graph											8.3
Bar Graph	×	●	●	●	●	●	●	●	●	●	8.3.1
Trend Graph	×	×	×	×	×	●	×	●	●	●	8.3.2
Circle Graph	×	×	×	×	×	●	●	●	●	●	8.3.3
Panel Meter	×	×	×	×	×	●	●	●	●	●	8.3.4
Proportional Bar Graph	×	×	×	×	×	●	×	●	●	●	8.3.5
Proportional Pie Graph	×	×	×	×	×	●	×	●	●	●	8.3.6
Trend Graph (Total)	×	×	×	×	×	×	×	●	●	●	8.3.7
Indicator											8.4
Text Indicator	●	●	×	×	×	●	●	●	●	●	8.4.1
Image Indicator	×	×	×	×	×	●	●	●	●	●	8.4.2
Indicator	●	●	×	●	●	●	●	●	●	●	8.4.3
Label Indicator	×	×	×	×	×	●	●	●	●	●	8.4.4
Change Screen	×	×	×	×	×	○ ^{*2}	●	●	○ ^{*2}	●	8.4.5
Output Indicator	×	×	×	○	○	× ^{*1}	×	●	× ^{*1*2}	●	8.4.6
Overlay Screen	×	×	×	×	×	○ ^{*2}	●	●	○ ^{*2}	●	8.4.7
Buzzer	×	×	×	×	×	○ ^{*2}	●	●	○ ^{*2}	●	8.4.8
Date/Time											8.5
Date	●	●	●	●	●	●	●	●	●	●	8.5.1
Time	●	●	●	●	●	●	●	●	●	●	8.5.2
Alarm											8.18
Alarm List	×	×	×	×	×	×	●	●	●	●	8.18.1
Alarm History	×	×	×	×	×	×	●	●	●	●	8.18.2
Ascii	×	●	●	●	●	●	●	●	●	●	8.6
Number	●	●	●	●	●	●	●	●	●	●	8.7
Box											8.8
Box	×	●	●	●	●	●	●	●	●	●	8.8
Filled Box	×	×	×	×	×	●	●	●	●	●	8.8
Circle											8.9
Circle	×	●	●	●	●	●	●	●	●	●	8.9
Filled Circle	×	×	×	×	×	●	●	●	●	●	8.9
Line	×	●	●	●	●	●	●	●	●	●	8.10
Image	×	×	×	×	×	●	●	●	●	●	8.2

Table 9.7:

Object name	DU type for data file										Reference page
	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940GOT	F940WGOT	
Touch Key	×	×	×	×	●	●	×	●	●	●	8.11
Switch	×	×	×	×	●	●	×	●	●	●	8.13.2
Send Data bank	×	×	×	×	●	●	×	●	●	●	8.13.3
Change Screen	×	×	×	×	●	●	×	●	●	●	8.13.4
Increment	×	×	×	×	●	●	×	●	●	●	8.13.5
Decrement	×	×	×	×	●	●	×	●	●	●	8.13.6
Data Setting	×	×	×	×	●	●	×	●	●	●	8.13.7
Write Constance	×	×	×	×	●	●	×	●	●	●	8.13.8
Key Board	×	×	×	×	●	●	×	●	●	●	8.10

● Can be set on the screen window and in the object list

○ Can be set in the screen list

× Cannot be set

*1 Used in the ET-50/51 Series, the ET-940 Series and the handy series.

*2 Can be set on the screen window in V 2.4 or later.

Objects which can be created in the key list dialog box

Table 9.8:

Object name	DU type for data file										Reference page
	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940GOT	F940WGOT	
Switch	○	○	○	○	○	○	○	○	○	○	8.13.2
Send Data bank	×	×	○	○	○	○	○	○	○	○	8.13.3
Change Screen	×	×	○	○	○	○	○	○	○	○	8.13.4
Increment	×	×	×	×	○	○	○	○	○	○	8.13.5
Decrement	×	×	×	×	○	○	○	○	○	○	8.13.6
Data Setting	×	○	×	×	○	○	○	○	○	○	8.13.7
Write Constance	×	×	×	×	×	○	○	○	○	○	8.13.8

○ Can be set in the key list × Cannot be set

The functions of existing touch keys can be added, changed or deleted.

Objects which can be created in the screen header dialog box

Table 9.9:

Object name	DU type for data file										Reference page
	10DU	25DU	30DU	40DU	40DU -TK	50DU -TK	F920 GOT-K	F930 GOT(-K)	F940GOT	F940WGOT	
Screen name	○	○	○	○	○	○	○	○	○	○	5.2.5
Scroll Type	○	×	×	×	×	×	×	×	×	×	8.14
Flashing (Backlight Type)	○	×	×	×	×	×	×	×	×	×	8.14

○ Can be set in the key list × Cannot be set

9.2 Additional functions and corresponding version of the DU

1) Data access unit (DU Series)

Table 9.10:

Additional function	FX-DU type and version No.											FX-PCS-DU/ WIN-E	
	25DU	30DU		40DU		40DU-TK		50DU-TK			30DU -GM	V 1.00 or later	V 2.00 or later
	V 1.00 or later	V 1.00 or later	V 2.00 or later	V 2.00 or later	V 2.10 or later	V 2.00 or later	V 2.10 or later	V 1.00 or later	V 2.00 or later	V 3.00 or later	V 1.00 or later	V 1.00 or later	V 2.00 or later
Device range compatibility with FX _{2C} , FX ₂ (V 3.07 or later)	○	○	○	○	○	○	○	○	○	○	×	○	○
Connection to A PC	○	×	○	○	○	○	○	○	○	○	×	○	○
Addition of alarm mode setting and related function	○	×	×	×	○	×	○	○	○	○	×	○	○
Screen protection function setting and related function (code No. setting)	×	×	×	×	○	×	○	○	○	○	×	○	○
Addition of communication setting for printer connected to FX-DU	×	×	×	×	○	×	○	○	○	○	×	○	○
Addition of output characteristics of switch object	○	×	×	×	○	×	○	○	○	○	×	○	○
Addition of date object display/format	○	×	×	×	○	×	○	○	○	○	×	○	○
Alarm function setting and history display	○	×	×	○	○	○	○	○	○	○	×	○	○
Registration of text library	○	×	×	×	×	×	×	○	○	○	×	○	○
Registration of image library	×	×	×	×	×	×	×	○	○	○	×	○	○
Edit of drawing creation data list	○	○	○	○	○	○	○	○	○	○	○	○	○
BMP file display function	×	×	×	×	×	×	×	○	○	○	×	○	○
Panel meter/circle graph/proportional graph display function	×	×	×	×	×	×	×	×	○	○	×	○	○
DU environment setting	×	×	×	×	×	×	×	×	○	○	×	○	○
Upward link connection of OMRON SYSMAC-C	×	×	×	×	×	×	×	×	○	○	×	○	○
Link unit connection of MELSEC-A PC to computer	×	×	×	×	×	×	×	×	○	○	×	○	○
Setting of transparent background color for character/numeric	×	×	×	×	×	×	×	×	○	○	×	○	○
Addition of indicator (label) and touch key (label) objects	×	×	×	×	×	×	×	×	×	○	×	○	○
Device range compatibility with FX _{2N} PC	×	×	×	×	×	×	×	×	×	○	×	○	○
Link unit connection of Fuji Denki FLEX-PC N Series	×	×	×	×	×	×	×	×	×	○	×	○	○
Connection to general-purpose communication (my computer board, etc.)	×	×	×	×	×	×	×	×	×	○	×	○	○

Note: In the FX-PCS-DU/98 (DOS version), V3.10 or later versions can be set in "Connection to A PC: 30DU-B".

2) Graphic operation terminal (GOT-F900 Series)

Table 9.11:

Additional function	F940WGOT			F940GOT, Handy GOT									
	V1.00 or later	V1.10 or later	V1.20 or later	V1.00 or later	V2.00 or later	V3.00 or later	V3.10 or later	V4.00 or later	V4.10 or later	V5.00 or later	V6.00 or later	V6.10 or later	V6.20 or later
Compatibility with F940GOT Series display unit	-	-	-	-	-	-	-	-	-	-	-	-	-
Addition of two printout types ("Screen image only" and "Screen image and object list")	-	-	-	-	-	-	-	-	-	-	-	-	-
Addition of "trend graph (batch)" object and addition of items displayed with outer frames	○	○	○	○	○	○	○	○	○	○	○	○	○
Compatibility with handy graphic operation terminal (F940GOT-SBD/LBD-H-E)	-	-	-	-	-	-	-	-	-	-	-	-	-
Reverse of label color of indicator (label) and touch key in black-and-white LC display	-	-	-	-	-	-	-	-	-	-	-	-	-
Compatibility with graphic operation terminal F930GOT	-	-	-	-	-	-	-	-	-	-	-	-	-
Improvement of image size (320 × 240 dots) registered in image library	○	○	○	○	○	○	○	○	○	○	○	○	○
Connection to bar code reader	○	○	○	-	○	○	○	○	○	○	○	○	○
Connection to QnA PLC	○	○	○	-	-	○	○	○	○	○	○	○	○
Connection to Allen-Bradley PLC	○	○	○	-	○	○	○	○	○	○	○	○	○
Setting of hard copy of F940GOT display screen	○	○	○	-	-	○	○	○	○	○	○	○	○
Addition of key codes for alarm history	○	○	○	-	-	○	○	○	○	○	○	○	○
Addition of graphic types to touch key and indicator (label) objects	○	○	○	-	-	-	○	○	○	○	○	○	○
Addition of shaded pattern to box and circle objects	○	○	○	-	-	-	○	○	○	○	○	○	○
Addition of line types to line and box objects	○	○	○	-	-	-	○	○	○	○	○	○	○
Compatibility with European character font	○	○	○	-	-	-	-	○	○	○	○	○	○
Connection to Q PLC	○	○	○	-	-	-	-	-	○	○	○	○	○
Connection to Siemens PLC	○	○	○	-	-	-	-	-	-	○	○	○	○
Compatibility with F940WGOT (wide type)	-	-	-	-	-	-	-	-	-	-	-	-	-
Connection to FX Series positioning unit (10/20GM)	-	○	○	-	-	-	-	-	-	-	-	-	-
Connection to FREQROL inverter	-	○	○	-	○	○	○	○	○	○	○	○	○
Changes in device input specifications in Allen-Bradley SLC500 Series	○	○	○	-	-	-	-	-	-	-	○	○	○
Connection to Allen-Bradley MicroLogix Series	○	○	○	-	-	-	-	-	-	-	-	○	○
Addition of time of occurrence to "Sequence" in "Alarm List"	-	○	○	-	-	-	-	-	-	-	-	○	○
Supporting of GOT internal devices (GB and GD)	○	○	○	○	○	○	○	○	○	○	○	○	○
Addition of status observation setting	○	○	○	-	-	-	○	○	○	○	-	-	-
Addition of high-quality character setting	-	○	○	-	-	-	-	-	-	-	-	○	○
Addition of 8 × 6 dot font setting	-	○	○	-	-	-	-	-	-	-	-	○	○
Storage of file in GDT format to GOT-F900 Series	○	○	○	○	○	○	○	○	○	○	○	○	○
Compatibility with Windows2000 in operation environment of DU/WIN-E	-	-	-	-	-	-	-	-	-	-	-	-	-
Connection to SIMATIC S7-200 by Siemens	-	-	○	-	-	-	-	-	-	-	-	-	○
Connection to FP Series by Matsushita Electric Works	-	○	○	-	-	-	-	-	-	-	-	○	○
Setting of security level for each system screen	○	○	○	-	-	-	-	-	-	-	○	○	○
Support of Windows Me in operating environments of DU/WIN	-	-	-	-	-	-	-	-	-	-	-	-	-
Screen creation for vertical type F930GOT	-	-	-	-	-	-	-	-	-	-	-	-	-
Display of entry code error	○	○	○	-	-	-	-	-	-	-	○	○	○
Compatibility with F920GOT-K	-	-	-	-	-	-	-	-	-	-	-	-	-
Compatibility with F930GOT-K	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional function	F920GOT-K		F930GOT(-K)						
	V 1.00 or later	V 1.00 or later	V 2.00 or later	V 2.10 or later	V 3.00 or later	V 4.00 or later	V 4.10 or later	V 4.20 or later	V 4.60 or later
Compatibility with F940GOT Series display unit	-	-	-	-	-	-	-	-	-
Addition of two printout types ("Screen image only" and "Screen image and object list")	-	-	-	-	-	-	-	-	-
Addition of "trend graph (batch)" object and addition of items displayed with outer frames	-	○	○	○	○	○	○	○	○
Compatibility with handy graphic operation terminal (F940GOT-SBD/LBD-H-E)	-	-	-	-	-	-	-	-	-
Reverse of label color of indicator (label) and touch key in black-and-white LC display	-	-	-	-	-	-	-	-	-
Compatibility with graphic operation terminal F930GOT	-	-	-	-	-	-	-	-	-
Improvement of image size (320 × 240 dots) registered in image library	-	-	-	-	-	-	-	-	-
Connection to bar code reader	-	-	○	○	○	○	○	○	○
Connection to QnA PLC	○	-	○	○	○	○	○	○	○
Connection to Allen-Bradley PLC	-	-	○	○	○	○	○	○	○
Setting of hard copy of F940GOT display screen	-	-	-	-	-	-	-	-	-
Addition of key codes for alarm history	○	-	○	○	○	○	○	○	○
Addition of graphic types to touch key and indicator (label) objects	○	-	○	○	○	○	○	○	○
Addition of shaded pattern to box and circle objects	○	-	○	○	○	○	○	○	○
Addition of line types to line and box objects	○	-	○	○	○	○	○	○	○
Compatibility with European character font	○	-	-	○	○	○	○	○	○
Connection to Q PLC	○	-	-	-	○	○	○	○	○
Connection to Siemens PLC	-	-	-	-	○	○	○	○	○
Compatibility with F940WGOT (wide type)	-	-	-	-	-	-	-	-	-
Connection to FX Series positioning unit (10/20GM)	-	-	-	-	-	-	○	○	○
Connection to FREQROL inverter	-	-	-	-	-	-	○	○	○
Changes in device input specifications in Allen-Bradley SLC500 Series	-	-	○	○	○	○	○	○	○
Connection to Allen-Bradley MicroLogix Series	-	-	○	○	○	○	○	○	○
Addition of time of occurrence to "Sequence" in "Alarm List"	○	-	-	-	-	-	○	○	○
Supporting of GOT internal devices (GB and GD)	○	○	○	○	○	○	○	○	○
Addition of status observation setting	○	-	○	○	○	○	○	○	○
Addition of high-quality character setting	○	-	-	-	-	-	○	○	○
Addition of 8 × 6 dot font setting	○	-	-	-	-	-	○	○	○
Storage of file in GDT format to GOT-F900 Series	○	○	○	○	○	○	○	○	○
Compatibility with Windows2000 in operation environment of DU/WIN-E	-	-	-	-	-	-	-	-	-
Connection to SIMATIC S7-200 by Siemens	-	-	-	-	-	-	-	○	○
Connection to FP Series by Matsushita Electric Works	-	-	-	-	-	-	○	○	○
Setting of security level for each system screen	○	-	-	-	-	○	○	○	○
Support of Windows Me in operating environments of DU/WIN	-	-	-	-	-	-	-	-	-
Screen creation for vertical type F930GOT	-	-	-	-	-	-	-	○	○
Display of entry code error	○	-	-	-	-	○	○	○	○
Compatibility with F920GOT-K	○	-	-	-	-	-	-	-	-
Compatibility with F930GOT-K	-	-	-	-	-	-	-	-	○

Additional function	FX-PCS-DU/WIN-E								
	V 1.00 or later	V 2.00 or later	V 2.10 or later	V 2.20 or later	V 2.30 or later	V 2.40 or later	V 2.50 or later	V 2.60 or later	V 2.70 or later
Compatibility with F940GOT Series display unit	×	○	○	○	○	○	○	○	○
Addition of two printout types ("Screen image only" and "Screen image and object list")	×	○	○	○	○	○	○	○	○
Addition of "trend graph (batch)" object and addition of items displayed with outer frames	×	○	○	○	○	○	○	○	○
Compatibility with handy graphic operation terminal (F940GOT-SBD/LBD-H-E)	×	×	○	○	○	○	○	○	○
Reverse of label color of indicator (label) and touch key in black-and-white LC display	×	×	○	○	○	○	○	○	○
Compatibility with graphic operation terminal F930GOT	×	×	×	○	○	○	○	○	○
Improvement of image size (320 × 240 dots) registered in image library	×	×	×	○	○	○	○	○	○
Connection to bar code reader	–	–	–	○	○	○	○	○	○
Connection to QnA PLC	–	–	–	–	○	○	○	○	○
Connection to Allen-Bradley PLC	–	–	–	–	○	○	○	○	○
Setting of hard copy of F940GOT display screen	–	–	–	–	○	○	○	○	○
Addition of key codes for alarm history	–	○	○	○	○	○	○	○	○
Addition of graphic types to touch key and indicator (label) objects	–	–	–	–	○	○	○	○	○
Addition of shaded pattern to box and circle objects	–	–	–	–	–	○	○	○	○
Addition of line types to line and box objects	–	–	–	–	–	○	○	○	○
Compatibility with European character font	–	–	–	–	–	○	○	○	○
Connection to Q PLC	–	–	–	–	–	○	○	○	○
Connection to Siemens PLC	–	–	–	–	–	○	○	○	○
Compatibility with F940WGOT (wide type)	–	–	–	–	–	–	○	○	○
Connection to FX Series positioning unit (10/20GM)	–	–	–	–	–	–	○	○	○
Connection to FREQROL inverter	–	–	–	–	–	–	○	○	○
Changes in device input specifications in Allen-Bradley SLC500 Series	–	–	–	–	–	–	○	○	○
Connection to Allen-Bradley MicroLogix Series	–	–	–	–	–	–	○	○	○
Addition of time of occurrence to "Sequence" in "Alarm List"	–	–	–	–	–	–	○	○	○
Supporting of GOT internal devices (GB and GD)	–	–	–	–	–	–	○	○	○
Addition of status observation setting	–	–	–	–	–	–	○	○	○
Addition of high-quality character setting	–	–	–	–	–	–	○	○	○
Addition of 8 × 6 dot font setting	–	–	–	–	–	–	○	○	○
Storage of file in GDT format to GOT-F900 Series	–	–	–	–	–	–	○	○	○
Compatibility with Windows2000 in operation environment of DU/WIN-E	–	–	–	–	–	–	○	○	○
Connection to SIMATIC S7-200 by Siemens	–	–	–	–	–	–	–	○	○
Connection to FP Series by Matsushita Electric Works	–	–	–	–	–	–	–	○	○
Setting of security level for each system screen	–	–	–	–	–	–	–	○	○
Support of Windows Me in operating environments of DU/WIN	–	–	–	–	–	–	–	○	○
Screen creation for vertical type F930GOT	–	–	–	–	–	–	–	○	○
Display of entry code error	–	–	–	–	–	–	–	○	○
Compatibility with F920GOT-K	–	–	–	–	–	–	–	–	○
Compatibility with F930GOT-K	–	–	–	–	–	–	–	–	○

– : Function offered in this software ○:Can be set ×:Cannot be set

9.3 Cautions on using the screen data for an other type of PLC

9.3.1 Cautions on using the screen data for an other type of PC

Cautions when the screen data for FX, the screen data for A, the screen data for SYSMAC C Series (manufactured by OMRON) (hereinafter referred to as C) and the screen data for FLEX-PC N Series (manufactured by Fuji Denki) (hereinafter referred to as N) are used for each other

When the existing screen data is used in an other type of PC (FX ↔ A, A ↔ C, FX ↔ C or for N), the data can be used if the device Nos. specified for each screen or for system setting are included in the devices available in the destination PC type. Other device Nos. which cannot be used in the destination PC type are ignored and regarded as errors (Such device Nos. remain unchanged.).

However, special auxiliary relays and data registers for special characters are automatically converted into the device Nos. in the destination PC.

For example, when the screen data created for an FX PC is used in an A PC or a SYSMAC C Series PC (manufactured by OMRON), the data is converted as shown in "[4] Device list for each PC".

If the device range in the FX PC is exceeded or if the specified devices are not available in the destination PC type, such devices are regarded as errors and remain unchanged.

The data is processed in the same way also in the FLEX-PC N Series (manufactured by Fuji Denki) and general-purpose communication.

9.3.2 Cautions on change of the DU type

Cautions when the screen data for the 50DU-TK, the screen data for the 40DU-TK, the screen data for the 40DU, the screen data for the 30DU, the screen data for the 25DU and the screen data for the F940GOT are used for each other

When the existing screen data is used in an other type of DU (50DU-TK ↔ 40DU-TK, 50DU-TK ↔ 40DU, 50DU-TK ↔ 30DU or for 25DU or F940GOT), the objects (text, indicators, keyboard, etc.) set on each screen can be used if such objects are available in the destination DU type. Other objects which cannot be used in the destination DU type are deleted.

Even when an object is available in the destination DU type, it is regarded as an error if a coordinate exceeding the screen of the destination DU type is specified.

9.3.3 Cautions on DU type setting when the drawing data is transferred (written) to the DU

When writing the screen data to a data access unit, make sure at first that the screen data type setting (screen for FX, screen for A, screen for C or screen for N) is equivalent to the PC type setting in the data access unit, then transfer the screen data.

The screen data transferred while the PC type setting is not equivalent may be treated as error data caused by difference in usable devices.

In this case, when the PC type setting in the data access unit is aligned with the screen data type setting, such a data is recognized as normal data.

9.4 Device list for each PC

When the PC connected to the DU is modified by "Project settings . . .", assignment of devices set to objects is modified as shown in the table below.

For example, when a data device "X000" is used in the screen data created in an FX Series PC and the screen data is used in an OMRON C Series PC, the device is converted into "06400" and regarded as an error (remains unchanged as the device No. X000) in the general-purpose communication because a corresponding device is not present.

After modifying the data for an other type of PC, check the data in accordance with "6.6.1 Data check", then set a new device to each blank device No. position if errors are detected.

(For the details of setting of each object, refer to "8. Object Function Description".)

Device No. list for each PC

The name indicates a device (in the FX Series PLC) used in this manual.

Table 9.12:

Device type	PC connected				
	FX	A	C	N	General-purpose
X	X000~X377 (octal)	X000~XB7 (hexadecimal)	06400~07915	X000~X0BF	–
	–	X100~X7FF (hexadecimal)	19200~30315		–
Y	Y000~Y377 (octal)	Y000~YB7 (hexadecimal)	08000~09515	Y000~Y0BF	–
M	M0~M1535	M0~M1535	09600~19115	M0000~M5FF	M0000~M2047
	–	M1536~M1983	A0000~A2715	M600~M7FF	–
	–	M2048~M3647	H0000~H9915	M800~M1FF	–
Special M	M8000~M8255	M9000~M9255	–	M8000~M81FF	M8000~M8063
S	S0~S999	F0~F1023	00000~06315	S000~S3FF	–
T	T0~T255	T0~T511	T0000~T0511	T000~T1FF	–
C	C0~C255	C0~C511	C0000~C0511	C0000~C0FF	–
D	D0~D999	D0~D6143	D0000~D6143	D0000~C07FF	D0~D4095
	D1000~D3047	R0~R3047	–	R0000~R07FF	–
	D6000~D7999	R6144~R8143	D8192~D9999	D2000~D27FF	–
B	–	B0~BFF	L0000~L6315	L0000~L1FFF	–
Special D	D8000~D8255	D9000~D9255	–	D8000~D80FF	D8000~D8015
W	–	W0000~W0FFF	–	W000~W0FFF	–
V,Z	V,Z,V1~7,Z1~7	Special D	–	Special D	–

The device ranges in this table indicate that device names are changed when a connected PC is changed. They do not indicate the ranges which can be set in a DU.

Numerics used for device Nos.

PC units use the numerics shown in the table below for device Nos.

Table 9.13:

Octal	Decimal	Hexadecimal	SYSMAC C Series	Octal	Decimal	Hexadecimal	SYSMAC C Series
0	0	0	000	20	16	10	100
1	1	1	001	21	17	11	101
2	2	2	002	22	18	12	102
3	3	3	003	23	19	13	103
4	4	4	004	24	20	14	104
5	5	5	005	25	21	15	105
6	6	6	006	26	22	16	106
7	7	7	007	27	23	17	107
10	8	8	008	30	24	18	108
11	9	9	009	31	25	19	109
12	10	A	010	32	26	1A	110
13	11	B	011	33	27	1B	111
14	12	C	012	34	28	1C	112
15	13	D	013	35	29	1D	113
16	14	E	014	36	30	1E	114
17	15	F	015	37	31	1F	115

For example, in an FX PC, device Nos. for input (X) and output (Y) are represented in octal, and device Nos. for internal relay (M), timer (T), counter (C), etc. are represented in decimal.

Internal devices of the GOT-F900

They are built in the GOT-F900 main unit as intrinsic devices.

The DU/WIN-E whose version is Ver. 2.50 or later supports them.

You can rewrite internal devices of the GOT-F900 using the status observation, switch and numeric input functions, and use them for the conditions for lamp indication, numeric display and switch.

Because these internal devices are not related to the connected PLC or microcomputer board, they are available in any connectable PLC (including microcomputer board).

Table 9.14:

Device name		Available range		Device number representation
Bit device	GB (GOT internal device)	GB0 to GB131	Not available	Decimal
		GB132 to GB255	Available (only in the F920GOT-K)	
		GB256 to GB1023	Available (excluding the F920GOT-K)	
Word device	GD (GOT internal device)	GD0 to GD99	Not available	Decimal
		GD100 to GD127	Available (only in the F920GOT-K)	
		GD128 to GD1023	Available (excluding the F920GOT-K)	

GB 0 to GB 131 and GD 0 to GD 99 are used for the processing inside the GOT-F900.

Table 9.15:

Device	Function	Device	Function
GD0	Current time (second)	GB0 to GB12	Not to be used
GD1	Current time (minute)	GB13	Communication error
GD2	Current time (hour)	GB14,GB15	Not to be used
GD3	Current time (day)	GB16	Buzzer (Issued once) *1
GD4	Current time (month)	GB17	Buzzer (Issued three times) *1
GD5	Current time (year)	GB18	Buzzer (Issued continuously) *1
GD6	Current time (day of week)	GB19 to 131	Not to be used
GD7	Not to be used	GB132 to GB1023	For user's use
GD8,GD9	Upper limit of input numerical value (32 bit)	*1 Buzzer is available in the following OS. F940WGOT Ver. 1.40 or later F940GOT,F943GOT Ver. 6.40 or later F930GOT,F933GOT Ver. 4.40 or later F930GOT-K Ver. 4.50 or later F920GOT-K Ver. 1.00 or later Handy GOT Ver. 6.40 or later	
GD10,GD11	Lower limit of input numerical value (32 bit)		
GD12	Numerical value, Ascii input		
GD13 to GD99	Not to be used		
GD100 to GD1023	For user's use		

Device range of each connected PLC

This paragraph shows the allowable maximum device range which can be set using the DU/WIN-E software (in the DU or the GOT main body) in accordance with each connected equipment (PLC). When reading this manual, adopt the device range in accordance with the connected PLC.

1) MELSEC Q/QnA Series PLC

Table 9.16:

Device name		Allowable setting monitor range	Device No. expression	
Bit device	Input (X)	X0 to X1FFF	Hexadecimal	
	Output (Y)	Y0 to Y1FFF		
	Internal relay (M)	M0 to M32767	Decimal	
	Latch relay (L)	L0 to L32767		
	Annunciator (F)	F0 to F32767		
	Link relay (B)	B0 to B7FFF	Hexadecimal	
	Special link relay (SB)	SB0 to SB7FF		
	Timer (T)	Contact	T0 to T32767	Decimal
		Coil	—	
	Counter (C)	Contact	C0 to C32767	
		Coil	—	
	Special internal relay (M)	—		
	Special relay (SM)	SM0 to SM2047		
	Integrating timer (ST)	Contact	SS0 to SS32767	
Coil		SC0 to SC32767		
Step relay (S)	S0 to S32767			
Word device	Data register (D)	D0 to D32767	Hexadecimal	
	Special data register (D)	—		
	Special register (SD)	SD0 to SD32767		
	Link register (W)	W0 to W7FFF		
	Special link register (SW)	SW0 to SW7FF		
	Timer (T)	Counter (C)	T0 to T32767	Decimal
		Current value	—	
	Preset value	Counter (C)	C0 to C32767	
		Current value	—	
	Integrating timer (current value) (SN)	SN0 to SN32767		
File register (R)	R0 to R32767 *1			
Index register (Z)	Z			

*1 Targets are file registers in a block changed over by the RSET instruction.

Restriction in setting monitor in computer link for A Series

When a computer link unit for the A Series PLC is mounted to the CPU in the QnA Series PLC and the GOT-F900 is connected to the unit, the allowable setting monitor range becomes equivalent to that for the AnA CPU, and the restriction shown in the table below is imposed (due to limitation in the computer link).

Table 9.17:

Device name		Setting monitor		Device No. expression
		GOTRE-PACK	DU/WIN-E	
Word device	Timer (current value)	—	0 to 255	Decimal
	Timer (preset value)	—	—	
	Counter (current value)	—	0 to 255	
	Counter (preset value)	—	—	
	File register	—	—	

2) MELSEC A Series PLC

Table 9.18:

Device name		Allowable setting monitor range	Device No. expression	
Bit device	Input (X)	X0 to X0FFF	Hexadecimal	
	Output (Y)	Y0 to Y0FFF		
	Internal relay (M)	M0 to M8191	Decimal	
	Annunciator (F)	F0 to F2047		
	Link relay (B)	B0 to B1FFF	Hexadecimal	
	Special internal relay (M)	M9000 to M9255	Decimal	
	Timer	Contact (T)		T0 to T2047
		Coil (T)		T0 to T2047
	Counter	Contact (T)		C0 to C1023
Coil (T)		C0 to C1023		
Word device	Data register (D)	D0 to D8191	Hexadecimal	
	Special data register (D)	D9000 to D9255		
	Link register (W)	W0 to W1FFF	Decimal	
	Timer (current value) (T)	T0 to T2047		
	Counter (current value) (C)	C0 to C1023		
	File register (R)	R0 to R8191		
	Index register*1 (Z) (V)	(Z)		Z
(V)		V		

*1 In the computer link connection, index registers cannot be written.

3) MELSEC FX Series PLC

Table 9.19:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Input relay (X)	X0000 to X0377	Octal
	Output relay (Y)	Y0000 to Y0377	
	Auxiliary relay (M)	M0000 to M3071	Decimal
	Special auxiliary relay (M)	M8000 to M8255	
	State (S)	S0000 to S0999	
	Timer contact (T)	T000 to T255	
	Counter contact (C)	C000 to C255	
Word device	Timer (current value) (T)	T000 to T255	Decimal
	Counter (current value) (C)	C000 to C255	
	Data register (D)	D000 to D0999	
	RAM file register (D)	D1000 to D7999	
	Special data register (D)	D8000 to D8255	
	Index register*1 (Z) (V)	Z V	

4) FX Series GM positioning function (GM CPU direct connection)

Table 9.20:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Input (X)*1	X0 to X377	Octal
	Output (Y)	Y0 to Y67	
	Internal relay (M)	M0 to M511	Decimal
	Special auxiliary relay (SM)	M9000 to M9175	
Word device	Data register (D)	D0 to D8191	Decimal
	Special data register (SD)	D9000 to D3999	
	File register (R)	D4000 to D6999	
	Index register (Z, V)	Z (32 bits) V (16 bits)	

*1 Devices cannot be written.

5) FREQROL Series inverter (INV CPU direct connection)

Table 9.21:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Control status (S)	S0:□ to S7:□	Decimal
Word device	Alarm code (A)	A0:□ to A7:□	
	Parameter (Pr)	Pr0:□ to Pr993:□	
	Program operation (PG)	PG0:□ to PG89:□	
	Special parameter (SP)	SP108:□ to SP127:□	

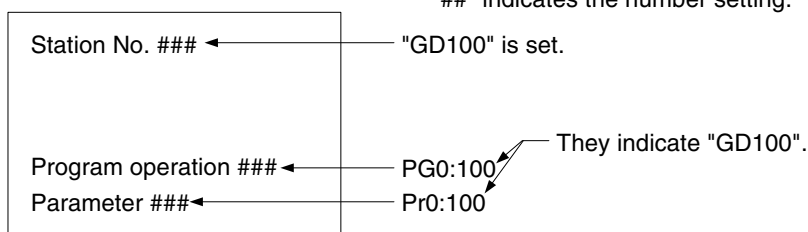
"□" indicates the station No. of the monitored inverter.

The station No. can be specified in the following two methods.

Station No. specification (direct) : When setting devices, specify the station No. of the inverter.
Allowable setting range: 0 to 31

Station No. specification (indirect): When setting devices, the station No. of the inverter can be indirectly set using hexadecimal registers (GD100 to GD115) inside the GOT.
Two or more inverters can be changed on one screen.
Allowable setting range: 100 to 115
(* This range corresponds to devices GD100 to GD115).

Screen of GOT-F900



6) FLEX-PC N Series PLC manufactured by Fuji Denki

Table 9.22:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Input relay (X)	X0 to X7FF	Hexadecimal
	Output relay (Y)	Y0 to Y7FF	
	Internal relay (M)	M0 to M1FFF	
	Latch relay (L)	L0 to L1FFF	
	State (S)	S0 to S7FF	
	Special internal relay (M)	M8000 to M81FF	
Word device	Timer (T)	T0 to T3FF	
	Counter (C)	C0 to C1FF	
	Data register (D)	D0 to D2FFF	
	Special data register (D)	D8000 to D81FF	
	Link register (W)	W0 to W3FFF	
	File register (R)	R0 to R3FFF	

7) SYSMAC C Series PLC manufactured by OMRON

Table 9.23:

Device name		Allowable setting monitor range	Device No. expression
Bit device	I/O relay	. .0000 to 51115	Decimal
	Internal auxiliary relay		
	Data link relay (LR)	L0000 to L6315	
	Auxiliary storage relay (A)	A0000 to A2715	
	Hold relay (H)	H0000 to H9915	
	Timer contact (T)	T000 to T511	
	Counter contact (C)	C000 to C511	
Word device	Data memory (D)	D0000 to D9999	
	Timer (current value) (T)	T000 to T511	
	Counter (current value) (C)	C000 to C511	

8) Allen-Bradley

a) SLC500 Series

<In the case of former than Ver. 2.50>

Table 9.24:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Bit (B)	B0030000 to B003255F B0100000 to B255255F	Hexadecimal
	Timer (timing bit) (TT)	—	Decimal
	Timer (timing bit) (TN)	T004000 to T004255 T010000 to T255255	
	Counter (up counter) (CU)	—	
	Counter (down counter) (CD)	—	
	Counter (completion bit) (CN)	C005000 to C005255 C010000 to C255255	
Word device	Timer (preset value) (TP)	T004000 to T004255 T010000 to T255255 *1	Decimal
	Timer (current value) (TA)	T004000 to T004255 T010000 to T255255 *1	
	Counter (preset value) (CP)	C005000 to C005255 C010000 to C255255 *1	
	Counter (current value) (CA)	C005000 to C005255 C010000 to C255255 *1	
	Integer (N)	N007000 to N007255 N010000 to N255255	

<In the case of Ver. 2.50 or later>

Inputs in the device format shown in the table above are available also.

Table 9.25:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Bit (B)	B3:0/0 to B3 :255/15 B10:0/0 to B255:255/15	Hexadecimal
	Timer (T) (timer bit)	T4:0/14 to T4:255/14 T10:0/14 to T255:255/14 or T4:0/TT to T4:255/TT T10:0/TT to T255:255/TT	
	Timer (T) (completion bit)	T4:0/13 to T4:255/13 T10:0/13 to T255:255/13 or T4:0/DN to T4:255/DN T10:0/DN to T255:255/DN	
	Counter (C) (effective up count bit)	C5:0/15 to C5:255/15 C10:0/15 to C255:255/15 or C5:0/CU to C5:255/CU C10:0/CU to C255:255/CU	
	Counter (C) (effective down count bit)	C5:0/14 to C5:255/14 C10:0/14 to C255:255/14 or C5:0/CD to C5:255/CD C10:0/CD to C255:255/CD	
	Counter (C) (completion bit)	C5:0/13 to C5:255/13 C10:0/13 to C255:255/13 or C5:0/DN to C5:255/DN C10:0/DN to C255:255/DN	
Word device	Timer (T) ^{*1} (preset value)	T4:0.12 to T4:255.12 T10:0.12 to T255:255.12 or T4:0.PRE to T4:255.PRE T10:0.PRE to T255:255.PRE	Decimal
	Timer (T) ^{*1} (current value)	T4:0.2 to T4:255.2 T10:0.2 to T255:255.2 or T4:0.ACC to T4:255.ACC T10:0.ACC to T255:255.ACC	
	Counter (C) ^{*1} (preset value)	C5:0.12 to C5:255.12 C10:0.12 to C255:255.12 or C5:0.PRE to C5:255.PRE C10:0.PRE to C255:255.PRE	
	Counter (C) ^{*1} (current value)	C5:0.2 to C5:255.2 C10:0.2 to C255:255.2 or C5:0.ACC to C5:255.ACC C10:0.ACC to C255:255.ACC	
	Integer (N)	N7:0 to N7:255 N10:0 to N255:255	

*1 32-bit data cannot be written to devices.

File No. and element specification range

Specify each file No. and each element in decimal. However, specify the bit position of bit (B) in hexadecimal.

Table 9.26:

Device name		File No. ^{*1}	Allowable element specification range
Bit device	Bit (B)	3 10 to 255	0 to 255 ^{*2}
	Timer (timer bit) (TT)	4 10 to 255	0 to 255
	Timer (completion bit) (TN)	4 10 to 255	0 to 255
	Counter (effective up count bit) (CU)	5 10 to 255	0 to 255
	Counter (effective down count bit) (CD)	5 10 to 255	0 to 255
	Counter (completion bit) (CN)	5 10 to 255	0 to 255
Word device	Timer (preset value) (TP)	4 10 to 255	0 to 255
	Timer (current value) (TA)	4 10 to 255	0 to 255
	Counter (preset value) (CP)	5 10 to 255	0 to 255
	Counter (current value) (CA)	5 10 to 255	0 to 255
	Integer (N)	7 10 to 255	0 to 255

^{*1} File Nos. 10 to 255 are available in user settings.

^{*2} For each element, the bit position can be specified in the range from 0 to F (15).

- b) MicroLogix 1000/1200/1500 Series
DU/WIN (in the case of Ver. 2.50 or later).

Table 9.27:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Bit (B)	B3:0/0 to B3:255/15	Hexadecimal
	Timer (T) (timer bit)	T3:0/14 to T255:255/14 or T3:0/TT to T255:255/TT	Decimal
	Timer (T) (completion bit)	T3:0/13 to T255:255/13 or T3:0/DN to T255:255/DN	
	Counter (C) (effective up count bit)	C3:0/15 to C255:255/15 or C3:0/CU to C255:255/CU	
	Counter (C) (effective down count bit)	C3:0/14 to C255:255/14 or C3:0/CD to C255:255/CD	
	Counter (C) (completion bit)	C3:0/13 to C255:255/13 or C3:0/DN to C255:255/DN	
Word device	Timer (T) ^{*1} (preset value)	T3:0.12 to T255:255.12 or T3:0.PRE to T255:255.PRE	
	Timer (T) ^{*1} (current value)	T3:0.2 to T255:255.2 or T3:0.ACC to T255:255.ACC	
	Counter (C) ^{*1} (preset value)	C3:0.12 to C255:255.12 or C3:0.PRE to C255:255.PRE	
	Counter (C) ^{*1} (current value)	C3:0.2 to C255:255.2 or C3:0.ACC to C255:255.ACC	
	Integer (N)	N3:0 to N255:255	

*1 32-bit data cannot be written to devices.

File No. and element specification range

Specify each file No. and each element in decimal. However, specify the bit position of bit (B) in hexadecimal.

Table 9.28:

Device name		File No. ^{*1}	Allowable element specification range
Bit device	Bit (B)	3 to 255	0 to 255 ^{*2}
	Timer (timer bit) (T)	3 to 255	0 to 255
	Timer (completion bit) (T)	3 to 255	0 to 255
	Counter (effective up count bit) (C)	3 to 255	0 to 255
	Counter (effective down count bit) (C)	3 to 255	0 to 255
	Counter (completion bit) (C)	3 to 255	0 to 255
Word device	Timer (preset value) (T)	3 to 255	0 to 255
	Timer (current value) (T)	3 to 255	0 to 255
	Counter (preset value) (C)	3 to 255	0 to 255
	Counter (current value) (C)	3 to 255	0 to 255
	Integer (N)	3 to 255	0 to 255

*1 File Nos. 3 to 255 are available in user settings.

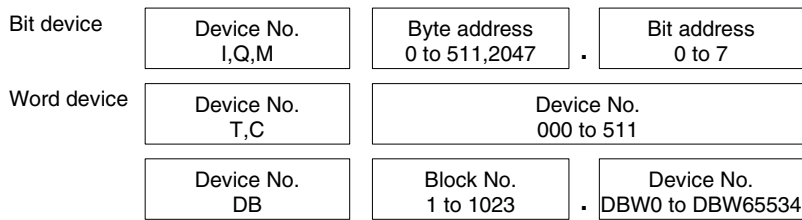
*2 For each element, the bit position can be specified in the range from 0 to 15.

- 9) Siemens
 - a) S7-300 Series PLC

Table 9.29:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Input (I)	I0.0 to I511.7	Decimal
	Output (Q)	Q0.0 to Q511.7	
	Bit memory (M)	M0.0 to M2047.7	
Word device	Timer (current value) (T)	T000 to T511	
	Counter (current value) (C)	C000 to C511	
	Data register (DB)	DB1.DBW0 to DB1.DBW65534 DB2.DBW0 to DB2.DBW65534 ⋮ DB1022.DBW0 to DB1022.DBW65534 DB1023.DBW0 to DB1023.DBW65534	

No. expression



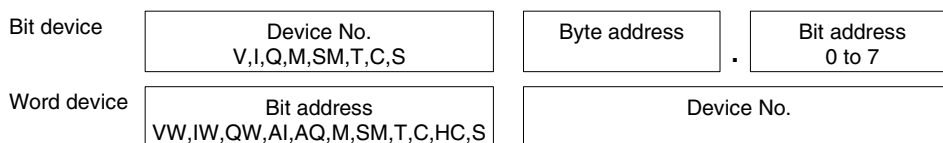
b) S7-200 Series PLC

Table 9.30:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Variable Memory (V)	V0.0 to V5119.7	Decimal
	Input (I)	I0.0 to I7.7	
	Output (Q)	Q0.0 to Q7.7	
	Bit memory (M)	M0.0 to Q31.7	
	Special Memory (SM)	SM0.0 to SM194.7	
	Timer (T) *1	T0 to T255	
	Counter (C) *1	C0 to C255	
Sequence Control Relay (S)	S0.0 to S31.7		
Word device	Variable Memory (V)	VW0 to VW5118	
	Input (I)	IW0 to IW6	
	Output (Q)	QW0 to QW6	
	Analog Input (AI) *2	AIW0 to AIW30	
	Analog Output (AQ)	AQW0 to AQW30	
	Bit memory (M)	MW0 to MW30	
	Special Memory (SM) *3	SMW0 to SMW192	
	Timer (T) (16bit) *4	T0 to T255	
	Counter (C) (16bit) *4	C0 to C255	
	High Speed Counter (HC) (32bit) *5	HC0 to HC2	
Sequence Control Relay (S)	SW0 to SW30		

- *1 Bit devices T and C cannot be written.
- *2 Word devices HC and AI cannot be written.
- *3 A word device SM cannot be monitored.
- *4 Word devices T and C are the 16-bit type.
- *5 A word device HC is the 32-bit type.

No. expression



10) General-purpose communication (micro computer board)

Table 9.31:

Device name		Allowable setting monitor range	Device No. expression
Bit device	Bit data (M)	M0 to M2047	Decimal
	Special memory (M) *1	M8000 to M8063	
Word device	Word data (D)	D0 to D4095	
	Special memory (M) *1	D8000 to D8015	

*1 Special memory is offered for special application (such as interrupt output and communication error information) of the GOT.

11) FP Series by Matsushita Electric Works

Table 9.32:

Device name		Allowable setting monitor range		Device No. expression
		GT Designer	FX-PCS-DU/WIN-E	
Bit device	Input relay (X) ^{*3}	X0000~X511F	X0000~X511F	Decimal ^{*6}
	Output relay (Y)	Y0000~Y511F	Y0000~Y511F	
	Internal relay (R) ^{*4}	R0000~R910F	R0000~R910F	
	Link relay (L) ^{*1}	L0000~L639F	L0000~L639F	
	Error alarm relay (E) ^{*2*3}	E0~E2047	E0~E2047	Decimal
	Timer contact (T) ^{*3}	T0~T3071	T0~T3071	
	Counter contact (C) ^{*3}	C0~C3071	C0~C3071	
Word device	Timer/counter elapsed value (EV)	EV0~EV3071	EV0~EV3071	
	Timer/counter set value (SV)	SV0~SV3071	SV0~SV3071	
	Data register (DT) ^{*4}	DT0~DT16383	DT0~DT16383	
	Link register (LD) ^{*1}	LD0~LD8447	LD0~LD8447	
	File register (FL) ^{*1*5}	FL0~FL32764	FL0~FL32764	

Pulse relay (P) and index registers (IX, IY and I) are not supported.

*1 It is not supported in the FP0.

*2 It is supported only in the FP2SH.

*3 It cannot be written.

*4 Special relays (R9000 to R910F) and special data registers (DT9000 to DT9255) are included also. However, if special data registers begin with D9000 in the FP Series, they cannot be accessed.

*5 Only the bank 0 can be accessed.

*6 Bit device No. (3-digit decimal) + Bit position (1-digit hexadecimal)

9.5 Control devices

The contents described in this manual are offered as only reference. Make sure to refer to the operation manual of the DU used because the specifications may be modified by upgrade of the DU version.

9.5.1 Control bit devices (The table below indicates the case where M0 is assigned.)

Data access unit/Graphic operation terminal

[25DU], [30DU], [40DU], [40DU-TK]

Table 9.33:

Auxiliary relay	Contents of control	Data direction
M+0 *1 M+1 *1	Shows two or three user screens by overlaying them in accordance with combination of ON and OFF of M+0 and M+1 (except in the 25DU).	PC→DU
M+2	When ON, extinguishes the backlight of the display screen after a specified time.	PC→DU
M+3	When ON, clears all the data sampled in the sampling mode.	PC→DU
M+4	Remains ON while sampling is performed in the sampling mode.	DU→PC
M+5	Remains ON for 1 minute when the current time becomes equivalent to the alarm time set by "Set Time" in "Other".	DU→PC
M+6	Turns ON when the battery of the DU is decreased.	DU→PC
M+7	Unused	—

*1 In the 25DU, screens cannot be overlaid. And M+0 and M+1 do not function though they are occupied.

[50DU-TK], [F940GOT]

The F920GOT-K, the F930GOT, the F930GOT-K and the handy GOT are different from the table below. For the details, refer to the later description.

Table 9.34:

Auxiliary relay	Contents of control	Data direction
M+0	Clicks the alarm history when a bit device is changed from OFF to ON.	PC→DU
M+1	Remains ON while a device assigned to alarm is turned ON.	DU→PC
M+2	When ON, extinguishes the backlight of the display screen after a specified time.	PC→DU
M+3	Clicks the data sampled in the sampling mode when a bit device is changed from OFF to ON.	PC→DU
M+4	Remains ON while sampling is executed in the sampling mode.	DU→PC
M+5	Unused (In V2.00 and later of 50DU-TK and in F940GOT, turns ON as a numeric setting completion flag.)	DU→PC
M+6	Turns ON when the battery of the DU is decreased.	DU→PC
M+7	Unused	—
M+8	Unused (In V3.00 and later of the F940GOT, turns ON to indicate that a bar code is input.)	DU→PC
M+9	Unused (In V 3.00 and later of the F940GOT, turns ON to indicate that bar code input is invalid.)	DU→PC
M+10	Unused (In V 3.00 and later of the F940GOT, turns ON to indicate that read of a bar code is completed.)	DU→PC

F920GOT-K**Table 9.35:**

Auxiliary relay	Contents of control	Data direction
M+0	Clears the alarm history when a bit device is changed from OFF to ON.	PC→DU
M+1	Remains ON while a device assigned for alarm is turned ON.	DU→PC
M+2	When ON, extinguishes the backlight of the display screen after a specified time.	PC→DU
M+3	Clears the data sampled in the sampling mode when a bit device is changed from OFF to ON.	PC→DU
M+4	Remains ON while sampling is executed in the sampling mode.	DU→PC
M+5	Turns ON as a numeric setting completion flag.	DU→PC
M+6	Unused	—
M+7	Unused	—
M+8	Unused	—
M+9	Unused	—
M+10	Unused	—

F930GOT-K**Table 9.36:**

Auxiliary relay	Contents of control	Data direction
M+0	Clears the alarm history when a bit device is changed from OFF to ON.	PC→DU
M+1	Remains ON while a device assigned for alarm is turned ON.	DU→PC
M+2	When ON, extinguishes the backlight of the display screen after a specified time.	PC→DU
M+3	Unused	—
M+4	Unused	—
M+5	Turns ON as a numeric setting completion flag.	DU→PC
M+6	Turns ON when the battery of the handy GOT is decreased.	DU→PC
M+7	Unused	—
M+8	Unused	—
M+9	Unused	—
M+10	Unused	—

- For LEDs of the function switches, assign the head device No. to the common screen using the "Output Indicator" object.

When the head device No. is set to M11 using the "Output Indicator" object, eight auxiliary relays M11 to M18 are occupied.

Pay attention so that the control bit devices shown above do not overlap M10 to M13.

Table 9.37:

Auxiliary relay	Contents of control	Data direction
M11 to M18	LEDs of function switches F1 to F8	PC→DU

For the details, refer to "8.16 Setting dedicated to handy GOT".

Handy GOT**Table 9.38:**

Auxiliary relay	Contents of control	Data direction
M+0	Clears the alarm history when a bit device is changed from OFF to ON.	PC→DU
M+1	Remains ON while a device assigned for alarm is turned ON.	DU→PC
M+2	When ON, extinguishes the backlight of the display screen after a specified time.	PC→DU
M+3	Clears the data sampled in the sampling mode when a bit device is changed from OFF to ON.	PC→DU
M+4	Remains ON while sampling is executed in the sampling mode.	DU→PC
M+5	Turns ON as a numeric setting completion flag.	DU→PC
M+6	Turns ON when the battery of the handy GOT is decreased.	DU→PC
M+7	Remains ON while the grip switch is turned ON.	DU→PC
M+8	Unused (In V 3.00 and later of the handy GOT, turns ON to indicate that a bar code is input.)	DU→PC
M+9	Unused (In V 3.00 and later of the handy GOT, turns ON to indicate that bar code input is invalid.)	DU→PC
M+10	Unused (In V 3.00 and later of the handy GOT, turns ON to indicate that read of a bar code is completed.)	DU→PC

- Wire the four operation switches on the panel face to inputs of the PLC.
- For LEDs of the operation switches, assign the head device No. to the common screen using the "Output Indicator" object.

When the head device No. is set to M11 using the "Output Indicator" object, four auxiliary relays M11 to M14 are occupied.

Pay attention so that the control bit devices shown above do not overlap M10 to M13.

Table 9.39:

Auxiliary relay	Contents of control	Data direction
M11 to M14	LEDs of operation switches SW1 to SW4	PC→DU

For the details, refer to "8.16 Setting dedicated to handy GOT".

9.5.2 Screen specification registers (The table below indicates the case where D0 is assigned.)

[25DU]

Table 9.40:

Data register	Contents of control	Data direction
D+0	Specifies the screen No. to be displayed in the screen mode.	PC→DU
D+1	Stores the screen No. currently displayed in the screen mode. (Stores "-1" while any mode other than the screen mode is selected.)	DU→PC

[30DU], [40DU], [40DU-TK], [50DU-TK], [F940GOT]

Table 9.41:

Data register	Contents of control	Data direction
D+0 D+1 D+2	Specify the screen Nos. to be displayed in the screen mode. D+0: Specifies the screen No. to be displayed. Or specifies the screen No. treated as reference in screen overlay. D+1, D+2: Specify the screen Nos. to be overlaid. (Store "-1" while screens are not overlaid.)	PC→DU
D+3 D+4 D+5	Store the screen Nos. currently displayed in the screen mode. (Store "-1" while any mode other than the screen mode is selected.) D+3: Specifies the screen No. currently displayed. D+4, D5: Store the screen Nos. overlaid.	DU→PC
D+6	Specifies a data file.* ¹	PC→DU
D+7	Specifies the user ID which is treated as the input completion target when the data on numerics and character codes is changed.* ²	PC→DU

*1 D+6 is offered in the 50DU-TK and the F940GOT exclusively.

*2 D+7 is offered in the F940GOT exclusively.



Data direction

Screen specification registers and control bit devices allow the DU to read the data written by the DU to data registers (D) and auxiliary relays (M) in the PC and the data written by a program in the PC.

PC → DU: Data is written by a program in the PC and read by the DU.

DU → PC: Data is written by the DU and used by a program in the PC.

9.6 Number of objects registered and data size

Each object is managed as screen data. The number of objects registered and the data size are monitored while a screen is created.

You do not have to consider the constraint unless you are creating 50 to 60 extremely complicated screens. Refer to this paragraph as only reference.

In the screen creation software, the used capacity, the remaining free capacity and the number of objects used can be displayed on the screen. When excessive objects are registered, an error message is displayed.

FX-10DU-E

Table 9.42:

Object name		Description	Allowable number of objects	
			No.0	Other than No. 0
Characters	Text	16 half-width characters (alphanumerics, katakana, symbols) in one line. A voiced consonant mark or a symbol (small circle) attached to a certain kana is treated as one character.	Text can be registered in any area other than the area occupied by display objects.	
	Number	Timers, counters and data registers (including file registers) in the PC can be displayed. Set values and current values can be modified.	Up to 16 objects on one screen *1	Up to 4 objects on one screen
Display objects	Indicator	The ON/OFF status of a bit device (X, Y, M, S, T, C) in the PC is represented by "■/ " (as much as one character).		
	Text indicator	Texts displayed when a specified bit is turned on and texts displayed when a specified bit is turned off can be registered.		
	Time	The contents of real-time clock cassette mounted to the PC are displayed in diversified formats.		
	Date			

*1 Up to 16 display objects can be registered on the screen No. 0. However, make sure to arrange them so that up to 4 display objects only are displayed on the screen (16 characters × 2 lines) displayed at a time.

Table 9.43:

Object name		Description	Allowable number of objects per screen
			No.0~No.24
Attribute objects	Scrolls	Specifies the page scroll pattern on the screen. A: Scrolls smoothly all lines. B: Scrolls by 2 lines at a time. C: Fixes the first line, and scrolls smoothly the later lines.	1
	Switch	Turns on a bit device (X, Y, M, S, T, C) in PC using the [A], [B] or [C] key in the FX-10DU-E. As the switch output characteristics, "momentary" or "alternate" can be selected. (Only one switch can be pressed at a time.)	One type of switch for each key. Up to 3 switches.
	Flickers	Flickers the backlight while the screen is displayed.	1
	Screen name	The screen name can be set for each of the screens No. 0 to No. 24 using katakana, alphanumerics and symbols.	1

FX-25DU-E

Table 9.44:

Item	Description
Total screen data size	30 KB (user screens, external characters, etc.)
Number of displayable screens	User screen: 200 screens maximum (screen Nos. 0 to 199) System screen: 9 screens (screen Nos. 501 to 509)
Data size per screen	1,000 bytes maximum

Up to 200 screens can be created, and the total data size of all the screens should be 30 KB or less. (For the data size of each object, refer to the table on the left.)

30 KB (all screens) ≥ Number of objects x Data size

+ 256 bytes (fixed)

+ 4 KB (fixed for external characters)

+ Alarm messages

+ Text library

1,000 bytes ≥ Data size of one screen

Variable depending on the number of objects registered

Table 9.45:

Object name	Data size per object	Allowable number of objects per screen
Text	14 to 30 bytes	70
Ascii	16 bytes	2
Number	24 bytes	8 in all. However, up to 3 library texts.
Bar Graph	24 bytes	
Library Text	24 bytes	
Indicator	16 bytes	16 in all. However, up to 2 text indication.
Text indicator	16 bytes	
Line	16 bytes	60
Circle	16 bytes	60
Box	16 bytes	60
Date	16 bytes	1 for each (when RTC cassette is used)
Time	16 bytes	
Switch	8 bytes	6 in all. 1 change screen can be registered as common setting for all screens.
Change screen	8 bytes	
Text Library	8 to 28 bytes	100

FX-30DU-E,FX-40DU-ES,FX-40DU-TK-E

Table 9.46:

Item	Description
Total screen data size	64 KB (user screens, external characters, etc.)
Number of displayable screens	User screen: 256 screens maximum (screen Nos. 0 to 199) System screen: 11 screens (screen Nos. 500 to 510)*1
Data size per screen	4,096 bytes maximum

*1 The system screens Nos. 502 and 503 exclusively are available in the FX-30DU-E.

Up to 256 screens can be created, and the total data size of all the screens should be 64 KB or less.(For the data size of each object, refer to the table on the left.)

64 KB (all screens) ≥ Number of objects x Data size

+ 256 bytes (fixed)

+ 4 KB (fixed for external characters)

+ Alarm messages _____

+ Device comments _____

+ Data file _____

4,096 bytes ≥ Data size of one screen

Variable depending on the number of objects registered ←

Table 9.47:

Object name	Data size per object	Allowable number of objects per screen
Text	14 to 44 bytes	255
Ascii	16 bytes	10
Number	24 bytes	12 in all. A 32-bit device is counted as "2".
Bar Graph	24 bytes	
Indicator	16 bytes	32 in all.
Output indicator*2	16 bytes	
Line	16 bytes	255
Circle	16 bytes	255
Box	16 bytes	255
Date	16 bytes	1
Time	16 bytes	1
Switch	8 bytes	50 in all. 10 in all for common setting.
Send data bank	8 bytes	
Change screen	8 bytes	
Increment*3	8 bytes	
Decrement*3	8 bytes	
Data setting*3	8 bytes	
Touch Key*3	8 bytes	32. 10 in all for common setting.
Key board*3	8 bytes	1

The maximum number of objects registered on one screen should be 255 or less.

255 ≥ Number of objects registered on one screen

*2 Available in the 40DU and the 40DU-TK exclusively.

*3 Available in the 40DU-TK exclusively.

FX-50DU-TK-E,FX-50DU-TKS-E Series
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Table 9.48:

Item	Description
Total screen data size	128 KB (user screens, external characters, etc.)
Number of displayable screens	User screen: 500 screens maximum (screen Nos. 0 to 499) System screen: 21 screens (screen Nos. 500 to 520)
Data size per screen	8,000 bytes maximum

Table 9.49:

Object name	Number of objects registered		C
	A	B	
	Number of objects per screen	Common setting screen	Number of displayable objects
Ascii	10	10	10
Number	30	30	30
Bar Graph			
Library Text			
Library Image			
Circle Graph			
Panel Meter			
Proportional Bar Graph	10	10	10
Proportional Pie Graph			
Trend Graph	1	1	1
Indicator	50	50	50
Output indicator			
Text indicator			
Image indicator			
Overlay screen			
Label indicator			
Buzzer			
Date	1	1	1
Time	1	1	1
Switch	50	50	50
Send data bank			
Increment			
Decrement			
Data setting			
Change screen			
Write constant			

Table 9.49:

Object name	Number of objects registered		C
	A	B	
	Number of objects per screen	Common setting screen	Number of displayable objects
Touch Key	32	32	32
Keyboard	1	1	1

The number of objects which can be displayed on one screen in the FX-50DU-TK(S)-E is a numeric indicated in the C column. The configuration is "A + B ≤ C".

When two or more screens are overlaid or when two or more screens are overlaid using "Change screen", the numeric indicated in the C column is the upper limit of the numbers of objects which can be displayed on one screen.

For the details, refer to the operation manual of the FX-50DU-TK(S)-E.

Table 9.50:

Library name	Number of objects	Length or size
Text library	200	40 half-width characters or 20 full-width characters
Image library	200	16 x 16 to 256 x 240 dots

F920GOT-K, F930GOT(-K), F940GOT, Handy GOT

Number of registered objects and data capacity

Table 9.51:9.38

Item	Description
Total screen data size	128KB (user screens, external characters, etc.)...F920GOT-K 256KB (user screens, external characters, etc.)...F930GOT(-K) 512KB (user screens, external characters, etc.)...F940GOT
Number of displayable screens	User screen: 500 screens maximum (screen Nos. 0 to 499) System screen: 25 screens (screen Nos. 1001 to 1030)
Data size per screen	16,000 bytes maximum

Table 9.52:

Object name	Number of objects registered			C
	A	B	B'	
	Number of objects per screen	Common setting screen	Screen call	Number of displayable objects
Ascii	10	10	10	10
Number	50	50	50	50
Bar Graph				
Library Text				
Library Image				
Circle Graph				
Panel Meter				
Proportional Bar Graph	10	10	10	10
Proportional Pie Graph				
Trend Graph(Sampling)	1	1	1	1
Trend Graph (Batch)	1	1	1	1
Indicator	50	50	50	50
Text indicator				
Image indicator				
Overlay screen				
Label indicator				
Buzzer				
Date	10	10	10	10
Time				
Alarm List	1	1	1	1
Alarm History				

Table 9.52:

Object name	Number of objects registered			C
	A	B	B'	
	Number of objects per screen	Common setting screen	Screen call	Number of displayable objects
Switch	50	50	50	50
Send data bank				
Increment				
Decrement				
Data setting				
Change screen				
Write constant				
Touch Key	50	50	50	50
Keyboard	1	1	1	1

The number of objects which can be displayed on one screen in the F940GOT is the number shown in the "C" column. The configuration is "A + B + B' < C".

When screens are overlaid normally or using "Overlay Screen", the maximum number of objects which can be displayed is also the number shown in the "C" column.

Table 9.53:

Library name	Number of objects	Length or size
Text library	2000	40 half-width characters or 20 full-width characters
Image library	2000	16 x 16 to 320 x 240 dots

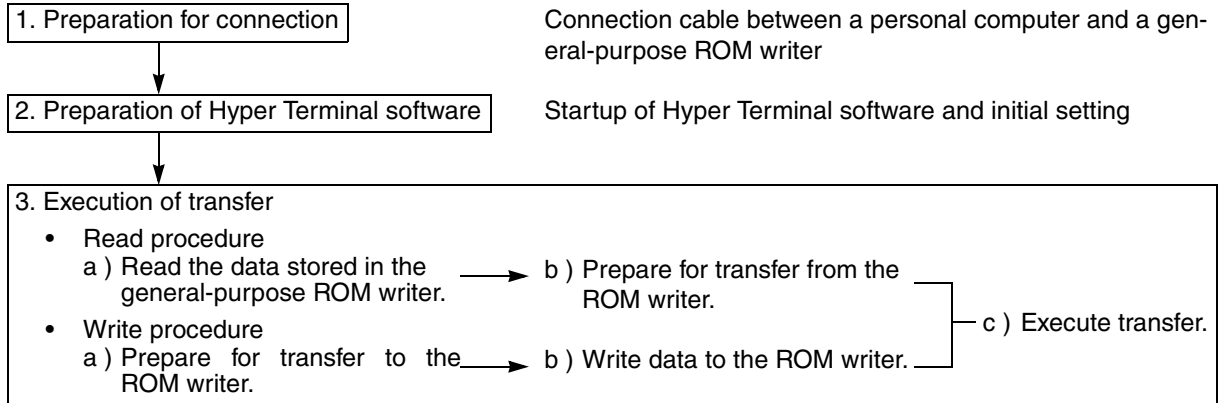


For the details, refer to the operation manual of the FX-50DU-TK(S)-E.

9.7 Data transfer between a general-purpose ROM writer (preparation before transfer such as connection)

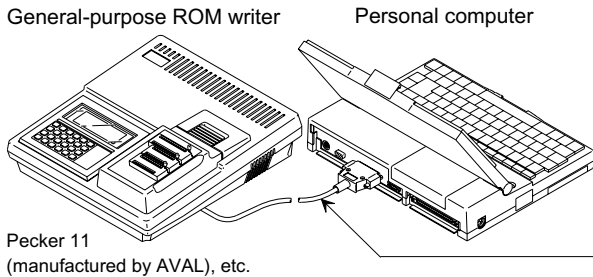
This paragraph describes the connection to transfer the screen data stored in the memory inside a personal computer and the data stored in the memory built in a general-purpose ROM writer. This paragraph describes also as an example the procedure to transfer the data using the communication software (Hyper Terminal) offered as an accessory of the Windows.

Explanation of procedure



1. Preparation for connection

- 1) Connection of personal computer and ROM writer
Connect them via the RS-232C interface.



Connect the RS-232C connector using either of the following data transfer cables.
 F2-232CAB (connector in personal computer: 25-pin)
 F2-232CAB-1 (connector in personal computer: 9-pin)

- Select a cable in accordance with the shape of the RS-232C port in the personal computer. When there are two or more ports (COM1 ~) in the personal computer, COM1 to COM4 can be changed over using the communication software (Hyper Terminal).
- 2) Applicable memory and DU
Prepare a ROM memory applicable to the used DU.

Table 9.54:

	10DU	25DU	30DU	40DU	40DU-TK	50DU-TK	F940GOT
FX-EPROM-4M or M27C4002- **F (4 MB) manufactured by SGS-TOMSON	—	—	—	—	—	—	✓
FX-EPROM-1M or M27C1001- **F (1 MB) manufactured by SGS-TOMSON	—	—	—	—	—	✓	—
FX-EPROM-512 or equivalent to 27C512 (512 kB)	—	—	✓	✓	✓	—	—

✓ : Can be used.— : Cannot be used.

- The used general-purpose ROM writer should be compatible with the ROM memory shown in the table above.

- 3) Setting of general-purpose ROM writer
 Refer to the manual of the general-purpose ROM writer, set the communication condition in the ROM writer within the range shown in the table below, and make the ROM writer ready for communication. When a latest personal computer is used, the baud rate may be set to a larger value.

Table 9.55:

Item	Allowable set range ("["]" indicates an initial value.)	Set value
Baud rate (bps)	[9600], 4800, 2400, 1200, 600	
Data bit length (bits)	[7], 8,	
Stop bit length (bits)	[1], 2,	
Parity check	[None], odd, even	
Transfer format	Only "Intel HEX" is allowed.	Intel HEX
Word type *1	Even-High; Low, [High]	High

*1 When writing a ROM for the GOT-F900, make sure to set this item because the CPU is the Risc type. The command for the ROM writer is "[SET][-][B]".

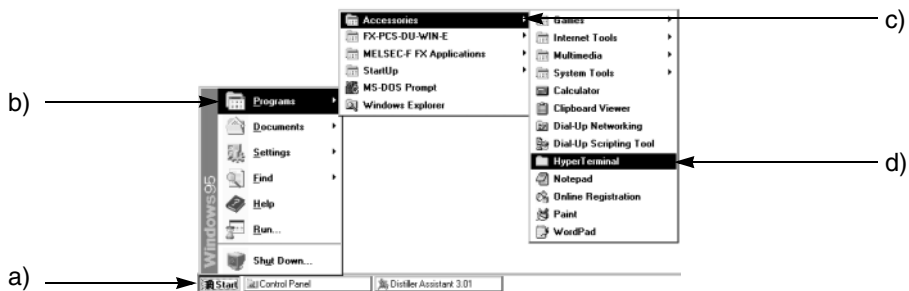
- ☞ The communication condition shown above should be able to be set in the used general-purpose ROM writer.

Preparation is completed.

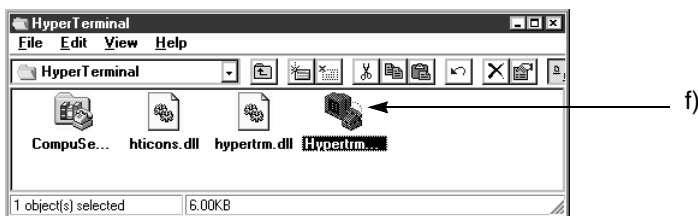
2. Preparation of Hyper Terminal software

This paragraph describes the connection to transfer the screen data stored in the memory inside a personal computer and the data stored in the memory built in a general-purpose ROM writer. This paragraph describes also as an example the procedure to transfer the data using the communication software (Hyper Terminal) offered as an accessory of the Windows.

- 1) Startup
 - a) Click the Start button.
 - b) Point "Program" using the mouse. The window showing installed applications is open.
 - c) Point the "Accessory" folder.
 - d) Click the "Hyper Terminal" folder on the sub menu.

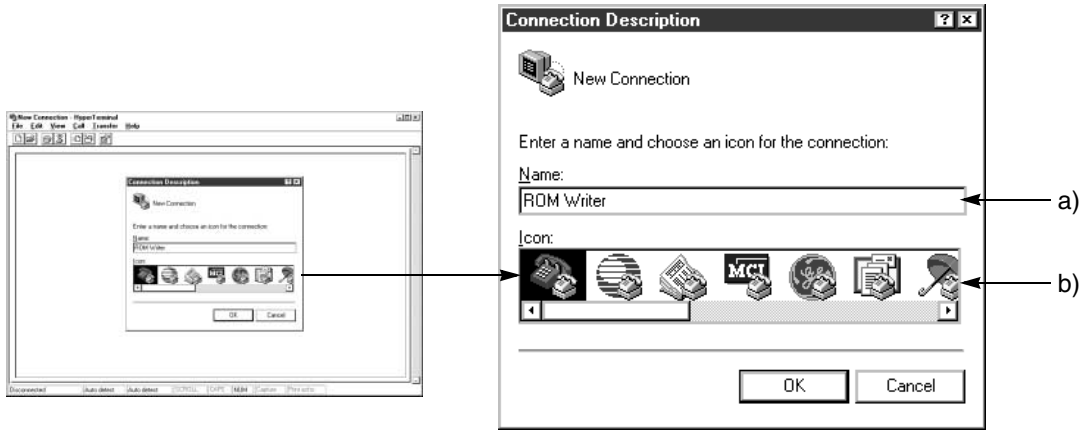


- e) The "Hyper Terminal" folder is open.
- f) Click the "Hypertrm" icon to start up the Hyper Terminal software.



2) Initial setting

- a) Enter a name ("ROM Writer", for example) to "Name" on the Connection Setting dialog.
- b) Select the icon from "Icon", and click the OK button.



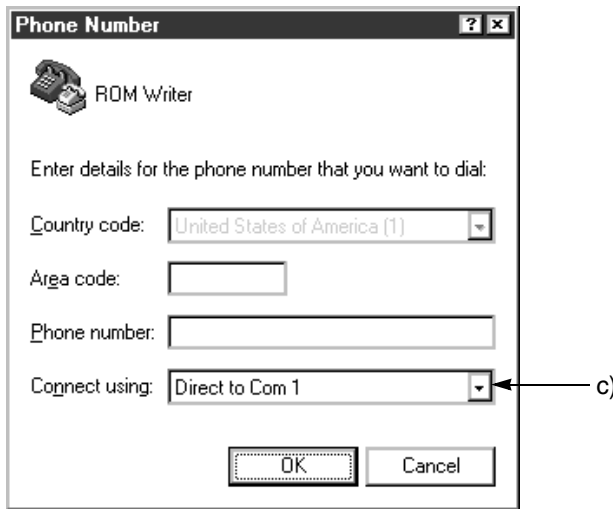
Perform the settings c) and d) below using "File" on the Tool menu.



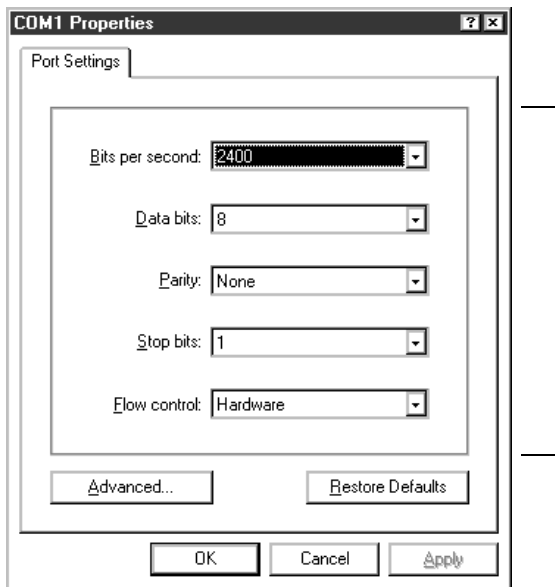
Registered trademark of Hyper Terminal software

The Hyper Terminal is a registered trademark of HilgRaeve in the USA.

- c) When the Phone No. dialog is open, select the RS-232C serial communication port No. connected to the general-purpose ROM writer in "Connection Method", and click the OK button. Other items such as Country No. may be left as they are.



- d) When the COM[] Property dialog box is open, set the tags of "Port Setting" to the communication condition selected in the general-purpose ROM writer, and click the OK button.



Set them to the communication condition selected in the general-purpose ROM writer.

3. Execution of transfer

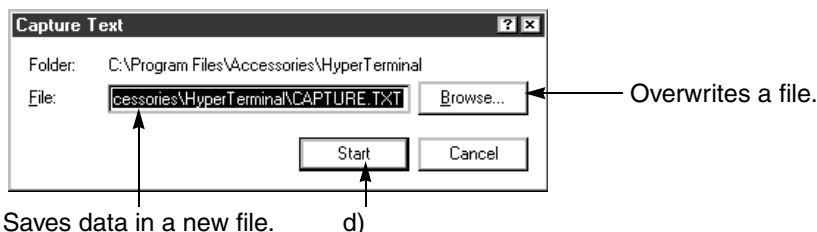
Communication between the general-purpose ROM writer can be performed using the "Transfer" command on the tool bar.



- Send File... ← Not used
- Receive File... ← Not used
- Capture Text... ← Reads data from a general-purpose ROM writer (Personal computer ← ROM writer).
- Send Text File... ← Writes data to a general-purpose ROM writer (Personal computer → ROM writer).
- Capture to Printer

1. Procedure to read data from a general-purpose ROM writer

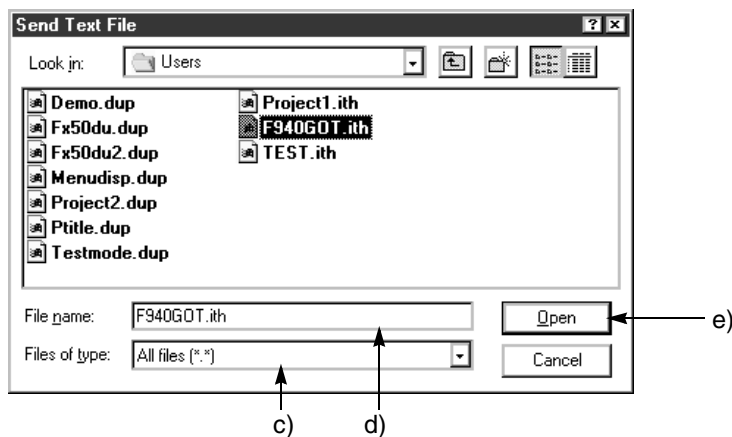
- a) Click the "Transfer" command. Click "Capture Text".
- b) The Capture Text dialog box is open.
- c) Save the data captured (read) from the general-purpose ROM writer with a new file name or an existing file name.
 - When the read data is saved in a new file
Enter a directory and a new file name.
The read data is saved in the new file (when the entered file name is not present).



- When an existing file is overwritten with the read data
Click the Refer button. The Capture File Select dialog box is open.
Select a file name to be overwritten from the file list.
Make sure that the general-purpose ROM writer is ready for communication.
If it is not ready for communication, refer to the manual of the general-purpose ROM writer and make it ready for communication.
 - d) Click the Start to start communication and execute read.

2. Procedure to write data to a general-purpose ROM writer

- a) Click the "Transfer" command. Click "Send Text File".
- b) The Send Text File dialog box is open.
- c) Set "File Type" to "All files (*.*)" so that all files are shown in the list.
Because files created using the DU/WIN software are saved in the ITH format, all files (*.*) should be specified.



- d) Enter a file name or select it from the list.
- e) Click the Open button to start communication and execute write.



Caution on use of general-purpose ROM writer

When data is transferred from a personal computer to a general-purpose ROM writer, data is not transferred to the ROM memory mounted on the ROM writer. Data is transferred to the RAM built in the ROM writer. After transferring the data to the ROM writer using the DU/WIN software, make sure to write the data stored in the built-in RAM to the EPROM memory. In the same way, when data is transferred from the ROM writer, the data saved in the EPROM memory should be preliminarily read to the built-in RAM.

9.8 Image library data list

The image data files indicated in this list are preliminarily offered in the bit map format by the DU/WIN software, and can be registered to the image library.

The size (pixels) and the file name (***.BMP) are shown under each image.

From Ver. 2.50, images for the F940WGOT are added at the end.

9.8.1 Frame



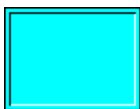
80×30
Frameb01.bmp



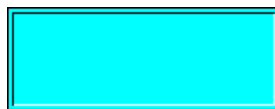
160×30
Frameb02.bmp



256×30
Frameb03.bmp



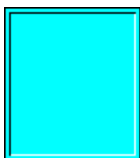
80×60
Frameb04.bmp



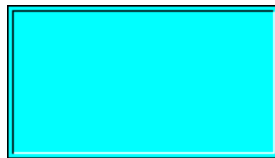
160×60
Frameb05.bmp



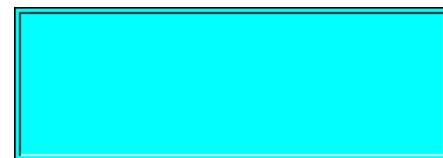
256×60
Frameb06.bmp



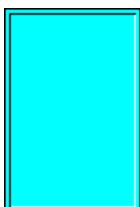
80×90
Frameb07.bmp



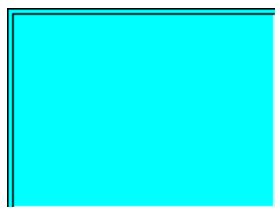
160×90
Frameb08.bmp



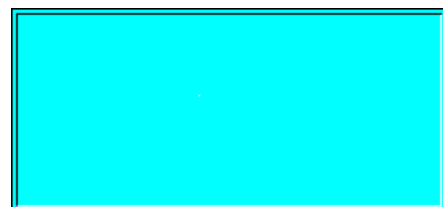
256×90
Frameb09.bmp



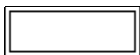
80×120
Frameb10.bmp



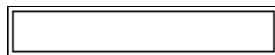
160×120
Frameb11.bmp



256×120
Frameb12.bmp



80×30
Framem01.bmp



160×30
Framem02.bmp



256×30
Framem03.bmp



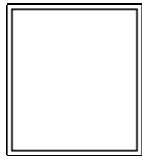
80×60
Framem04.bmp



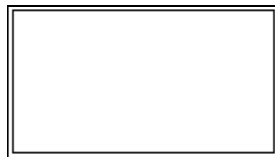
160×60
Framem05.bmp



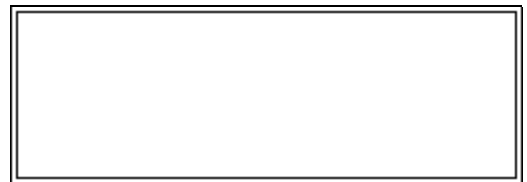
256×60
Framem06.bmp



80×90
Framem07.bmp



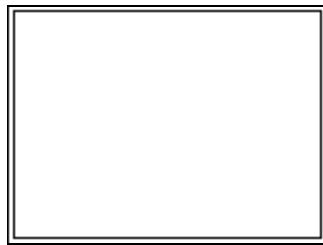
160×90
Framem08.bmp



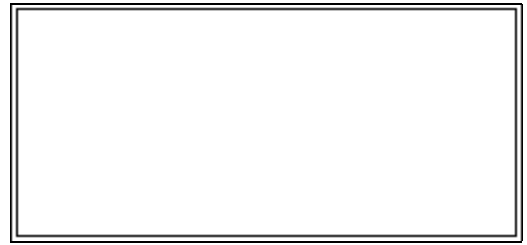
256×90
Framem09.bmp



80×120
Framem10.bmp



160×120
Framem11.bmp



256×120
Framem12.bmp



80×30
Framer01.bmp



160×30
Framer02.bmp



256×30
Framer03.bmp



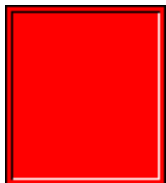
80×60
Framer04.bmp



160×60
Framer05.bmp



256×60
Framer06.bmp



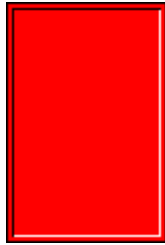
80×90
Framer07.bmp



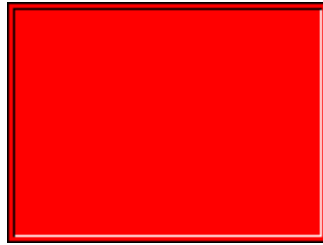
160×90
Framer08.bmp



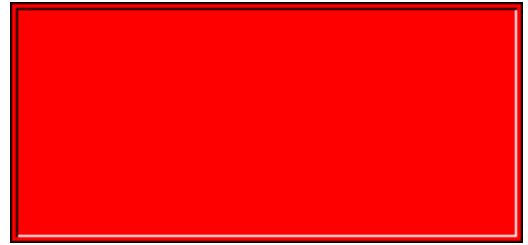
256×90
Framer09.bmp



80×120
Framer10.bmp

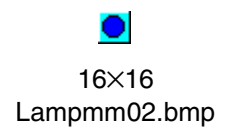
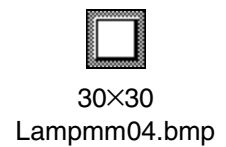
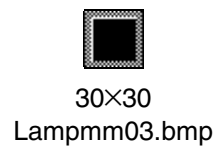
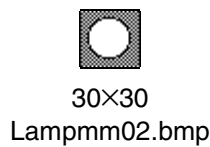
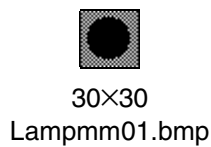
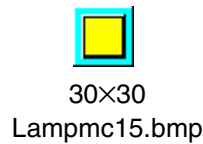
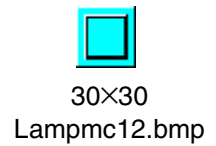
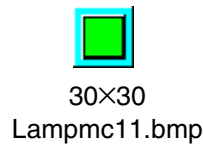
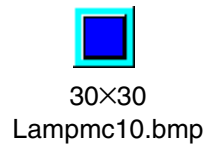
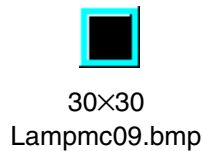
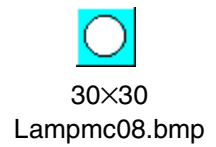
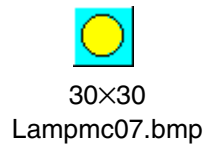
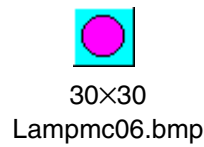
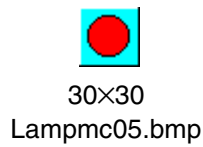
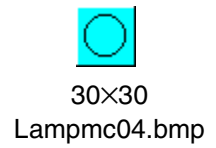
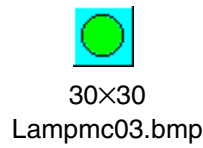
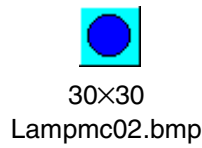
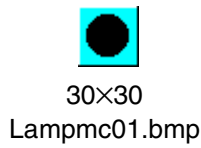
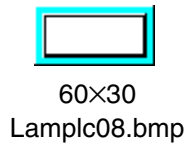
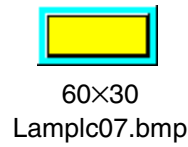
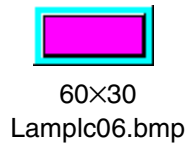
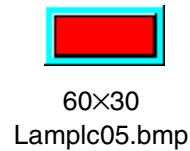
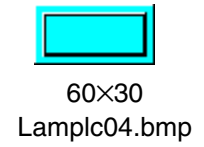
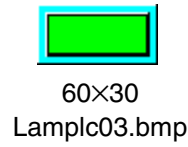
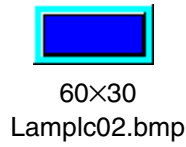
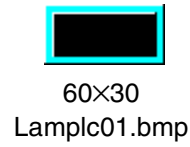


160×120
Framer11.bmp



256×120
Framer12.bmp

9.8.2 Indicator





16×16
Lampsc03.bmp



16×16
Lampsc04.bmp



16×16
Lampsc05.bmp



16×16
Lampsc06.bmp



16×16
Lampsc07.bmp



16×16
Lampsc08.bmp

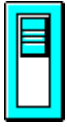


16×16
Lampsm01.bmp

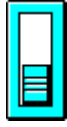


16×16
Lampsm02.bmp

9.8.3 Switch



30×60
Swchc01.bmp



30×60
Swchc02.bmp



30×60
Swchc03.bmp



30×60
Swchc04.bmp



60×30
Swchc05.bmp



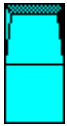
60×30
Swchc06.bmp



60×30
Swchc07.bmp



60×30
Swchc08.bmp



30×60
Swchc09.bmp



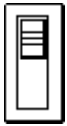
30×60
Swchc10.bmp



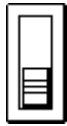
60×30
Swchc11.bmp



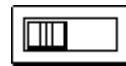
60×30
Swchc12.bmp



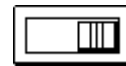
30×60
Swchm01.bmp



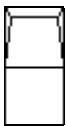
30×60
Swchm02.bmp



60×30
Swchm03.bmp



60×30
Swchm04.bmp



30×60
Swchm05.bmp



30×60
Swchm06.bmp

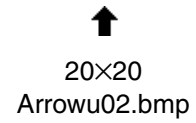
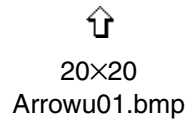
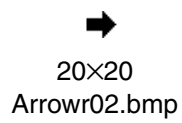
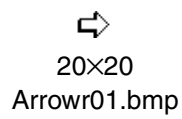
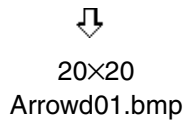


60×30
Swchm07.bmp



60×30
Swchm08.bmp

9.8.4 Other(mark)



9.8.5 List of images added in Ver. 2.50 and later

How to look at the file name

□ □ ○ ○ ○ ○ × × △ △ .bmp

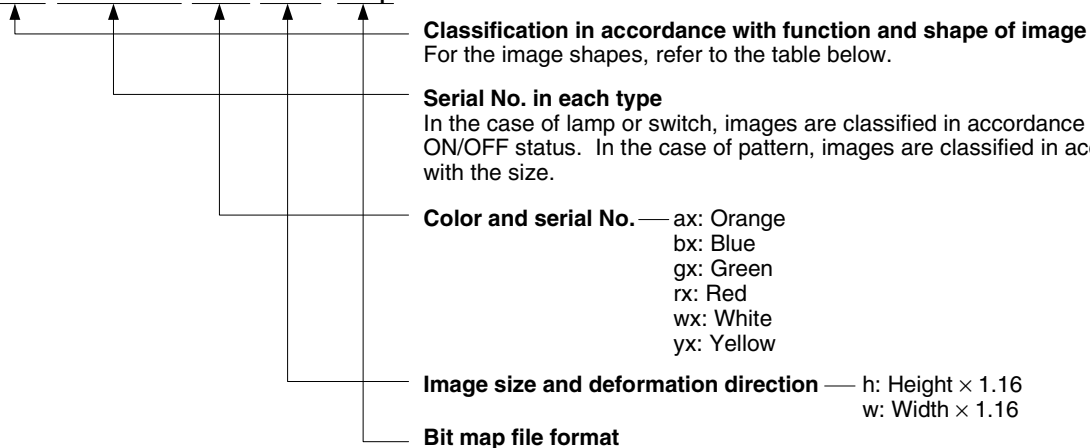


Table 9.56:













Function	Shape	Type	
Lamp	LP  lp001a2.bmp	lp001xx.bmp Round lamp ON image	lp002xx.bmp Round lamp OFF image
	LP  lp003a2.bmp	lp003xx.bmp Square lamp ON image	lp004xx.bmp Square lamp OFF image
	LP  lp005a4h.bmp	lp005xx△.bmp Round diamond-cut lamp ON image	lp006xx△.bmp Round diamond-cut lamp OFF image
Pattern	PT  pt1_0303.bmp	pt1_○○○○.bmp Metallic (stainless) image	pt2_○○○○.bmp Wooden image
		pt3_○○○○.bmp Metallic image	

Table 9.56:

Function	Shape	Type	
Switch	SW  sw001a4h.bmp	sw001××ΔΔ.bmp Round pushbutton switch ON image	sw002××ΔΔ.bmp Round pushbutton switch OFF image
	SW  sw003a4h.bmp	sw003××ΔΔ.bmp Round pushbutton switch ON image	sw004××ΔΔ.bmp Round pushbutton switch OFF image
	SW  sw005a4.bmp	sw005××ΔΔ.bmp Square pushbutton switch ON image	sw006××ΔΔ.bmp Square pushbutton switch OFF image
	SW  sw007a4.bmp	sw007××ΔΔ.bmp Square pushbutton switch ON image	sw008××ΔΔ.bmp Square pushbutton switch OFF image
	SW  sw009a6.bmp	sw009××ΔΔ.bmp Lateral slide switch ON image	sw010××ΔΔ.bmp Lateral slide switch OFF image
	SW  sw011a6.bmp	sw011××ΔΔ.bmp Longitudinal slide switch ON image	sw012××ΔΔ.bmp Longitudinal slide switch OFF image
	SW  sw013r6.bmp	sw013××ΔΔ.bmp sw015××ΔΔ.bmp sw017××ΔΔ.bmp Longitudinal lever switch ON image	sw014××ΔΔ.bmp sw016××ΔΔ.bmp sw018××ΔΔ.bmp Longitudinal lever switch OFF image
	SW  sw019w6h.bmp	sw019××ΔΔ.bmp Selector switch (right) ON switch	sw020××ΔΔ.bmp Selector switch (right) OFF switch

9.9 Troubleshooting

The file "Read me!" shown on the menu registered in the Windows program offers the additional information on supplementary items (such as troubleshooting not described in this paragraph and the version upgrade history) for use of the DU/WIN software. Make sure to read the contents of this file.

Installation

- Q1 Even when the Next button is clicked on the User Information dialog box during installation, the next screen is not displayed.
- A1 Enter the operator name and the company name.

Printout

- Q1 When the screen data is printed out, the DU screen is partially dislocated and the lower portion of the screen is printed above the upper portion. Or characters on the DU screen are printed out upside-down.
- A1 Two types of countermeasures are offered in accordance with the printer type.
Select "My Computer" and "Printer", and perform an either procedure in accordance your printer type.
- 1)Processing with the priority given to overlay drawing in the option setting
In the case of LP-8300 or LP-8000 manufactured by EPSON
 - 2)Direct output to a printer in the spool setting
In the case of any other printer
 - 3)Turn off the power of the printer, turn it on again, then execute printout.
In the case in which the setting 1) nor the setting 2) is not provided in the property

Processing with the priority given to overlay drawing

Change the setting so that the spool function in the property of the current printer is not used. Perform the following procedure.

Procedure

- 1 Select "My Computer" and "Printer" in the Windows95 to open the printer folder.
- 2 Click to select the printer currently registered.
- 3 Press the left button of the mouse or select "File" and "Property" to open the printer property.
- 4 Open "Option setting".
- 5 Check "Priority to overlay drawing".

Countermeasures by the spool setting

Change the setting so that the spool function in the property of the current printer is not used. Perform the following procedure.

Procedure

- 1 Select "My Computer" and "Printer" in the Windows95 to open the printer folder.
- 2 Click to select the printer currently registered.
- 3 Press the left button of the mouse or select "File" and "Property" to open the printer property.
- 4 "Spool Setting" is provided on the property screen.
(It may not be provided in some printer types and printer driver versions.)
- 5 Select "Send print data directly to printer", and click the OK button.

Object input

- Q1 When a value (numeric) has been entered on the object setting dialog box and the [Enter] key has been pressed, the error dialog box is displayed and the input is disabled.
- A1 The entered value is beyond the allowable range of the input item.
Enter an appropriate value within the contents or the input range shown on the error dialog box.
Or full-width characters (Kanji characters) have been entered. Set the Kanji conversion FEP to OFF.

Screen data transfer

Q1 Data communication between the display unit and the DU/WIN software (personal computer) is not performed correctly.

A1 Estimated causes are problems in the connection cable and interference by another application. Check the following contents.

Connection cable

The cable may be defective, the connector may be defective, the connector may be disconnected, the cable may be wrong, or the cable is connected to a wrong connector.

Check conductivity, the connection method and the cable type.

For the details, refer to the hardware manual of the DU or the F940GOT.

("☞" indicates the reference page in this manual.)

[Reference manuals]

- For the manual type, refer to ☞ Paragraph 1.2.1.
- For the cable type, refer to ☞ Paragraph 2.3.
- For the cable disconnection check (connection diagram), refer to the FX Integrated Catalog and the DU/F940GOT Handy Manual.

Interference by another application

When another general application is specifying a port (COM) specified in the communication setting in the DU/WIN software, both the DU/WIN software and another application may perform communication at the same time.

For example, when the DU-WIN software tries to transfer the screen data by selection of "Transfer" and "DU" while communication with the PC, circuit monitoring or device monitoring is performed, this error occurs.

Terminate all other applications so that only the DU/WIN software can run. Then, perform communication. (If a communication error occurs again, start up the Windows again.)

Interference by communication of PC (only when FX-50DU-TK(S) is connected)

In the configuration in which the 50DU-TK is connected to the FX Series PC, when transfer is executed while the 50DU-TK is not in the wait status in the personal computer transfer mode (in which data communication is enabled), a communication error occurs or the DU/WIN software operation status becomes unstable.

This is because communication between the PC is performed by way of the two-port interface built in the 50DU-TK.

This error occurs only when the 50DU-TK is connected to the FX Series PC.

For the operating procedure, refer to "6.5 Jobs offered by the "Transfer" command".

9.10 Key code list

1) Key code list for the numeric and ASCII code input functions

Table 9.57:

Key	Key code (H)	Key	Key code (H)	Key	Key code (H)	Key	Key code (H)
SP	0020	@	0040	'	0060		
!	0021	A	0041	a	0061		
"	0022	B	0042	b	0062	↑	0082
#	0023	C	0043	c	0063	↓	0083
\$	0024	D	0044	d	0064	(clear)	0088
%	0025	E	0045	e	0065		
&	0026	F	0046	f	0066		
'	0027	G	0047	g	0067		
(0028	H	0048	h	0068		
)	0029	I	0049	i	0069		
*	002A	J	004A	j	006A		
+	002B	K	004B	k	006B		
,	002C	L	004C	l	006C		
-	002D	M	004D	m	006D		
		N	004E	n	006E		
/	002F	O	004F	o	006F		
0	0030	P	0050	p	0070		
1	0031	Q	0051	q	0071		
2	0032	R	0052	r	0072		
3	0033	S	0053	s	0073		
4	0034	T	0054	t	0074		
5	0035	U	0055	u	0075		
6	0036	V	0056	v	0076		
7	0037	W	0057	w	0077		
8	0038	X	0058	x	0078		
9	0039	Y	0059	y	0079		
:	003A	Z	005A	z	007A		
;	003B	[005B	{	007B		
<	003C	¥	005C				
=	003D]	005D	}	007D		
>	003E	^	005E	~	007E		
?	003F	_	005F				

2) Key code list used in each object

a) Key codes used in the numeric input function

Table 9.58:

Key code (H)	Application
0008	Deletes the numeric value being input by one digit from the bottom (BS).
000D	Writes a numeric value to the write destination device or moves the cursor.
002D	"_"
002E	"."
0030 to 0046	Inputs a numeric value.
0082	Moves the cursor upward.
0083	Moves the cursor downward.
0088	Deletes a numeric value being input.

b) Key codes used in the ASCII code input function

Table 9.59:

Key code (H)	Application
0008	Deletes the numeric value being input by one digit from the bottom (BS).
000D	Writes a numeric value to the write destination device or moves the cursor.
ASCII code, shift JIS Chinese character code	Inputs a character.
0082	Moves the cursor upward.
0083	Moves the cursor downward.
0088	Deletes a character being input.

c) Key codes used in the alarm list display function

Table 9.60:

Key code (H)	Application
FFB0	Displays the cursor.
FFB1	Hides the cursor.
FFB2	Moves the cursor upward.
FFB3	Moves the cursor downward.
FFB8	Displays the detailed information.

d) Key codes used in the alarm history display function

Table 9.61:

Key code (H)	Application
FFB0	Displays the cursor.
FFB1	Hides the cursor.
FFB2	Moves the cursor upward.
FFB3	Moves the cursor downward.
FFB6	Deletes the displayed contents of selected alarms.
FFB7	Deletes the displayed contents of all alarms.
FFB8	Displays the detailed information.
FFBB	Resets a specified device.

- e) Key codes used in the entry code input function

Table 9.62:

Key code (H)	Application
FF68	Displays the entry code input screen.
FF69	Resets the entry code.

- f) Key code used in the buzzer sound setting function

Table 9.63:

Key code (H)	Application
FFFE	Does not issue the buzzer sound of touch keys.

- g) Key codes used in the hard copy function

Table 9.64:

Key code (H)	Application
FF17	Starts hard copy.
FF18	Finishes hard copy.

SOFTWARE MANUAL

FX-PCS-DU/WIN-E



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MODEL	FX-DU/WIN-SW-E
MODEL CODE	09R910